DEVELOPING A NEW MODEL OF UNDERSTANDING SELF-INJURY IN SECURE SETTINGS: THE ROLE OF RISK, PROTECTIVE AND ATTITUDE FACTORS

by

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ABSTRACT

This PhD aimed to develop further the Integrated Model of Self Injurious Activity (Ireland & York, 2012) within a secure forensic population. This model was based upon the Interpersonal Psychological Theory of Suicidal Behaviour (Joiner, 2005). The PhD aimed to explore risk, protective and function factors for self-injurious behaviour focusing upon components such as attitudes, cognitions, temperament, state and social environmental factors. Study 1 comprised a Delphi study with 33 experts. Experts generated questions to ask individuals about their attitude towards engaging in self-injurious behaviour. These questions were based upon exploration of the components of the Theory of Planned Behaviour (Ajzen, 1991). Study 2 was conducted with 47 participants using a functional assessment approach of file information, patient interviews and staff interviews. Thematic analysis was used to examine background factors, triggers, consequences and functions for self-injurious behaviour. It was also used to examine times when risk of self-injury was raised but not carried out in order to gain protective information. Some differences between staff and patients were observed as predicted. There was overlap with the Integrated Model of Self Injurious Activity and Self Determination Theory as predicted. Study 3 was conducted with 111 participants, again using a functional assessment approach of file information, patient interviews and staff interviews. These results also indicated overlap with the Integrated Model of Self Injurious Activity. The results of studies 2 and 3 indicated that the majority of protective factors identified were cognitive in nature which is a novel finding. Study 4 involved 80 participants. They were asked to complete psychometrics relating to coping, social support, resilience, impulsivity and suicidal ideation. They were also asked about their attitudes towards self-injury. The results indicated that previous tendency to engage in self-injurious behaviour was predicted by positive attitudes towards self-injury among other predictors. A revised model incorporating findings was developed. The current research indicates that the Revised Integrated Model of Self Injurious Activity holds potential in the explanation and understanding of potential risk and protective factors for self-injury. This is of benefit both theoretically and clinically.

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Chapter 1

INTRODUCTION

Rationale for study

Self-injurious behaviour has been of particular concern within forensic settings given the high rates of occurrence. Rates of self-injury within the community have been researched to occur at 6% (Klonsky, 2011) whereas forensic populations are reported at much higher rates. For example, Dixon-Gordon, Harrison & Roesch (2012) reviewed self-injury within offender populations (both prisons and secure hospitals) and found, from 46 reviewed studies, that lifetime self-injury rates within prison varied between 7% and 67%. Pluck & Brooker (2014) noted that of offenders serving part of their sentence in the community that 25% to 40% still indicated a lifetime history of self-injury. The authors highlighted that these were similar rates to those found amongst current prisoners therefore offenders within the community were still at much higher risk for self-injury than the general population. When looking at self-injury within inpatient psychiatric care, James, Stewart, Wright & Bowers (2012) noted that rates of self-injury are highest within forensic services. James, Stewart & Bowers (2012) reported that 42% of inpatients engaged in self-injurious behaviour.

Self-injury is an under-explored area (O'Donovan, 2007) which is surprising considering its link to subsequent suicide attempts (Hawton, Zahl & Weatherall, 2003). This highlights the importance of being able to predict, further understand, and support those who engage in self-injury. This is particularly the case in forensic settings where access to more lethal methods of self-injurious behaviours can become available because of restrictions in the environment, for example, ligature use is preferred as a result of limited access to implements with which to cut (Livingston 1997). The range of self-injurious behaviours encountered in forensic settings includes; cutting and scratching (Claes, Vandereyecken & Vertommen, 2005), burning (Walsh, 2007), bruising oneself (Claes, Klonsky, Muehlenkamp, Kuppens & Vandereycken, 2010), punching things (Laye-Gindu & Schonert –Reichl, 2005), sticking objects in the skin (Bukur et al.,2011), biting (Klonsky, 2011) and bone breaking (Adler & Adler, 2007). Ireland & York (2012) also suggest there has been little attempt to apply theory to the study of such

behaviour in forensic populations which is surprising when such application would assist with understanding the behaviour as opposed to merely describing it.

Research into self-injury within forensic settings tends to focus on individual and historical characteristics demonstrated by theories such as Nock & Prinsteins' (2004, 2005) *Four Function Model* and Williams' (1997) *Cry of Pain model* which demonstrate some promise in explaining self-injurious behaviour. However their limitations include the absence of considering factors such as the social environment and attitude behaviour. There has been limited research (e.g. Ireland & Quinn, 2007; Garbutt & Casey, 2015) into environmental factors such as the attitudes of others towards self-injurious behaviour (i.e. social environmental factors). A further important risk factor that has not been studied is the attitudes of those actually engaging in self-injurious behaviour. Attitudes have been found to be important in understanding an individual's intention to engage in various health related behaviours such as self-injury (O'Conner & Armitage, 2003).

Previous research

Previous research by the author has been completed (Ireland & York[1], 2012) as part of the candidate's MSc dissertation. The aim of that research was to explore the application of the *Interpersonal-Psychological Theory of Suicidal Behaviour* (ITPSB: Joiner, 2005; Joiner & Orden, 2008) to self-injurious behaviour amongst adult women prisoners. In particular, the research explored elements of the IPTSB; the *capacity* to engage in such behaviour by examining previous history of self-injury and *perceived burdensomeness* via an examination of psychological distress. The study indicated that capacity, as indicated by engagement in previous self-damaging behaviour, predicted self-injurious behaviour and self-injurious cognition. The study also supported the element of perceived burdensomeness in that severe depression was consistently related to self-injurious behaviour. The research proposed a new model of understanding due to some of the omissions identified within the IPTSB. The new model was described as the *Integrated Model of Self Injurious Activity* (IMSIA), and is more fully discussed in Chapter 3.

[1] My previous surname was York, now Caton.

The new model expanded on the original IPTSB by including environmental factors, cognition and protective factors as novel elements. IMSIA continued to highlight the importance of *capacity* as a direct influence on self-injury, but also proposes a *propensity* element that can also contribute to capacity and have a direct route to self-injury. Propensity is argued to derive from temperament (e.g. personality & coping) and state factors (e.g. psychological distress and perceived burdensomeness). Environmental factors were also included to reflect on the role of the forensic environment which included the concept of failed belongingness from the IPTSB and the availability of methods with which to self-injure. The model also included cognition as an additional factor due to the likelihood of this in influencing state variables and as a reflection of the importance of cognition in depression which was indicated within the study. Finally, the model also incorporated protective factors although it was acknowledged that the specifics of what to include were limited because of a lack of research in this area. It was outlined that the model as a whole was a speculative one that required testing by further research.

The exploration of elements of this new model represents the basis for the current PhD and it extends the MSc research. As outlined in Ireland & York (2012), self-injurious behaviour and cognition amongst men is currently a more neglected population, therefore the PhD focused upon self-injury with this particular population. The Integrated Model of Self Injurious Activity (IMSIA) was developed within the research conducted as part of the candidate's MSc research (Ireland & York, 2012). The PhD research aims to develop understanding of the function, risk and protective factors which could be considered within each element of the IMSIA, and then also explore specific predictors of self-injurious behaviour to add further specificity to the model.

There is currently no comprehensive theory that offers a holistic explanation of the risk of an individual engaging in self-injurious behaviour (as opposed to suicidal behaviour), the protective factors that may be in place for an individual and what their needs may be in terms of managing this risk. The importance of understanding the risk factors involved lies not only in assessing the potential harm a person may cause themselves but also in the effect treatment and intervention may have along with an understanding of the factors that might protect an individual from engaging in self-injury.

The remainder of the introduction reviews relevant literature. Chapters include self-injury definition; who self-injures and to what extent; theories of self-injury and the social environment; risk and protective factors for self-injury. Chapter 5 addresses the research problem.

Chapter 2

SELF INJURY DEFINITION; WHO SELF INJURES AND TO WHAT EXTENT?

Structure of the chapter

The chapter begins with an overview of the extent of the problem of suicide and self-injury including links between these behaviours. It moves on to examine the definitional challenges of self-injury and classification systems. Discussion of who engages in self-injury, and to what extent, follows. It concludes by focusing upon self-injury within forensic settings which is the population of interest within this PhD.

Extent of suicide and self-injury

The World Health Organisation reports that worldwide almost one million people die from suicide per year and that in the last 45 years suicide rates have increased by 60% (2013). Data from the Office for National Statistics highlights that in 2011 there were 6,045 suicides. This data also indicates that the UK suicide rate increased significantly between 2010 and 2011 from 11.1 to 11.8 deaths per 100 000 population (Suicides in the United Kingdom, 2011).

The importance of understanding the epidemiology of suicide is due to an emerging body of empirical research which highlights that self-injury is a particularly robust risk factor indicating suicide risk (e.g. Guan, Fox & Prinstein, 2012; Whitlock & Knox, 2007; Hawton & Harriss, 2007). It has been estimated that suicide rates are up to 30 times higher among those presenting with self-injury compared with the general population (Cooper et al.,2005). Recent research (Klonsky, May & Glenn 2012) examined the association between self-injury and suicide in four different samples; adolescent psychiatric patients, adolescent high school students, university students and a randomly selected telephone sample. In all samples self-injury exhibited a robust relationship with attempted suicide. The study also found that the only other factor that exhibited a stronger relationship to attempted suicide was suicidal ideation. When logistic regression analyses were carried out only self-injury and suicidal ideation maintained significant associations with attempted suicide.

Definitional challenges regarding self-injury

Despite agreement across disciplines about the significance of the self-injury there continues to be a lack of consensus concerning how to define the behaviour (Mangnall & Yurkovich, 2008). The problem of ambiguity in definition is that it delays progress as findings regarding theory and treatment cannot be generalised across studies. Stanford and Jones (2010) suggest that these difficulties impact on the understanding of areas such as prevalence rates, risk factors, and motivations for self-injury. However, given the differences in types of self-injurious behaviours, contexts in which they occur and different motives for the individual concerned, defining the behaviour is not straightforward. Some of the challenges faced which are discussed below, include the types of behaviour examined, the breadth of terms used within the field, what a particular definition covers in terms of behaviour, and interchangeable use of terms.

One issue relates to the consideration of which behaviours should be regarded as self-injury, as some studies focus upon cutting as the self-injurious behaviour (Medina, 2011) whilst others include scratching, head banging, and choking (Boxer, 2010). Differences in inclusion of behaviours limit cross study comparison despite the fact that they could potentially include the same individual (i.e. on one occasion cutting, whilst on another occasion head banging). As outlined, the range of behaviours that can be considered self-injurious is varied and poses additional complexities to researchers when considering the behaviours to be included within operational definitions. Different types of self-injurious behaviours are more commonly associated with certain population groups, for example men are considered to burn and punch more, whereas women are reported to cut and scratch more often (Andover, Primack, Gibb & Pepper, 2010). However one reflection regarding these apparent stereotypes can be found in potential sampling methods and reporting bias. *The Recall Bias Theory* (Moscicki, 1994) has been applied to sex differences in suicide suggesting that women are more able or willing to report their suicidal behaviour than men who are more likely to underreport suicidal behaviour because of potential critical attitudes from others. Research into self-injury may benefit from considering such potential differences in reporting across gender.

Another difficulty relates to the breadth of terms used within the field. Terms can refer to different types of self-injurious thoughts and behaviours across different studies (Nock 2010). For example, NICE guidelines adopt the term '*self-harm'* and state that it is '*self-*

poisoning or self-injury irrespective of the apparent purpose of the act' (NICE, 2004 pg. 16), whilst the NHS defines '*self-harm'* as '*when somebody intentionally damages or injures their body'* (NHS, 2013 webpage). Both definitions use the term 'self-harm', but one suggests the intent is irrelevant whilst the other focuses upon intent. Not only is the definitional term important, but also the implication of the use of that term.

Breadth of definition can also be problematic. For example, Vrouva, Fonagy, Fearon & Roussow (2010 pp. 852) state, '*we use the term 'Self Harm' in its broader meaning to indicate culturally unacceptable behaviour that involves direct and deliberate infliction of physical harm to one's body'.* Within this definition some may argue that behaviours such as tattooing, piercing and body modification could be included dependent upon one's understanding of 'cultural norms'. The American Academy of Child and Adolescent Psychiatry (1999) suggested that some forms of self-injury do include tattooing and excessive body piercing, with Mangnall & Yurkovich (2008 pg. 175) referring to tattooing and body piercing as '*culturally sanctioned self-harm behaviours'*.

The range of terms used within the literature is highlighted in Table 1. It is important to consider that, even when the same definition is employed between studies, the actual description of the definition can still differ.

Table 2.1: Terms used within the self-injury field

Term	Authors and date	Description
Parasuicide	Kreitman (1977)	*Including both attempted suicide and self-harm without an intention to die.*
Deliberate self-harm	Mangnall & Yurkovich (2010)	*The destruction of body tissue without conscious suicidal intent*
Deliberate self-poisoning	Khurram & Mahmood (2008)	*Ingestion of a poison or excessive dose of a medicine for self-harm*
Near fatal deliberate self-harm	Douglas, Cooper, Amos, Webb, Guthrie & Appleby (2004)	*Severe cases of deliberate self-harm*
Suicide attempts	DeLeo, Burgis, Bertolote, Kerkhof & Bille-Brahe (2006)	*A non-habitual act with nonfatal outcome that the individual, expecting to or taking risk to die or to inflict bodily harm, initiated and carried out with the purpose of bringing about wanted changes*
Suicide gesture	Nock & Kessler (2006)	*An intent to give the appearance of a suicide attempt in order to communicate with others*
Self-harm	Lewis, Rosenrot & Santor (2011)	*Deliberate acts engaged in to cause injury or damage to the self that carry nonsuicidal or suicidal intent*
Non suicidal self-harm	Mork et al. (2013)	S*elf-harm without suicide intent*
Cutting	Maharajh & Seepersad (2010)	*Cutting or self-inflicted epidermal damage (derma-abuse) describes a number of blood-letting behaviours among adolescents. Unlike suicidal behaviour, it is associated with low lethality and the absence of suicidal attempt*
Carving	Schwartz, Cohen, Norman, Hoffman & Meeks (1989)	*No definition is provided by these authors however they stated 'Nothing about self-cutting – known as 'carving' has been published in paediatric journals. Dysphoric adolescents may cut their wrists, forearms, or legs either openly or secretly as a way to display affection for a current boyfriend, girlfriend or popular rock music group'.*
Wrist cutting syndrome	Rosenthal, Rinzler, Wallsh & Klausner 1972	*The phenomenon of repeated wrist cutting in young women, performed in a nonsuicidal manner.*

Term	Authors and date	Description
Self-mutilation	Favazza, 1998	*The deliberate destruction of alteration of one's body tissue without conscious suicidal intent.*
Self-injury	Chandler, Myers & Platt (2011)	*Intentional injury to the outside of the body, mainly through cutting but including scratching, burning, biting or hitting*
Self-injurious behaviour	Claes, Vandereyecken & Vertommen (2005)	*Any socially unaccepted behaviour involving deliberate and direct injury to one's own body surface without suicidal intent*
Deliberate self-injury	Klonsky (2007)	*The intentional, direct injuring of body tissue without suicidal intent.*
Non suicidal self-injury	Deliberto & Nock (2008)	*Direct, deliberate destruction of one's body tissue without suicidal intent*
Self-directed violence	Sadeh, Javdani, Finy & Verona (2011)	No definition is provided by these authors, however they stated, ' *With regard to self-directed violence, research finds that the association between psychopathology/personality and suicidal behavior is at times moderated by gender'* indicating that the term does indeed refer to self-injury.

Research into the factors involved in tattooing, for example, provides differing perceptions and findings. Reyntjens (2002) indicated that women with many tattoos had significantly higher self-esteem than non-tattooed women. The study also found that of the women who indicated that they had self-injured, 75% also had tattoos. This finding may in part be explained by the research conducted by Claes, Vandereycken & Vertommen (2005), that explored tattooing and self-injury in individuals with eating disorders. The study found a negative correlation between piercing/tattooing and self-injury (self-injury & tattooing, p=0.25, self-injury and piercing, p=0.01). Whereas tattooing and piercing may be based on aesthetic 'self-care' motives, self-injury does not appear to serve a function to enhance attractiveness. The authors suggested that piercing and tattooing may function as a protective factor against self-injury, because these behaviours were about healthy expression of self and that this may be an area worthy of further investigation.

Another definitional challenge is the interchangeable use of terms, for example, '*self-injury'* and '*self-harm'* commonly being used synonymously. However, they may actually refer to different behaviours with different meanings (Claes & Vandereyecken, 2007). When the range of terms is explored separately they appear to refer to distinct yet overlapping concepts. '*Deliberate self-harm*' is a term mainly found in the US literature that refers to behaviours without suicidal intent (Fliege, Lee, Grimm & Klapp, 2009). '*Self-harm'* is used within the UK literature and includes behaviours both with and without suicidal intent (Claes & Vandereycken, 2007). In addition, '*self-mutilation'* is used to describe behaviours that inflict a high degree of harm and involve permanent destruction to a limb/essential part of the body (Nock & Favazza, 2009). Interestingly, these authors refer to the fact that in their earlier work they used the term 'self-mutilation' to describe self-injurious behaviour but now use the term '*non suicidal self-injury'* due to the negative connotations associated with '*self-mutilation'*. The term has been criticised for the assumption that the injuries caused are mutilations which is not always how the behaviour is perceived by those carrying it out (Adler & Adler, 2007). However, '*self-mutilation'* is still used interchangeably with *self-injury* and *self-harm* to describe behaviours that relate to tissue damage rather than more severe alteration of the body suggested previously (McDonald, 2006; Joyce, Light, Rowe, Cloninger & Kennedy, 2010). The term '*non suicidal self-injury'* does eliminate some of the

difficulty in overlap between nonsuicidal versus suicidal behaviour which may result in less effective clinical assessment and intervention. However the term also implies that the intent of such behaviours is always understandable or known to the individual undertaking them, although researchers have highlighted that this is not always the case (Hejelmeland, Hawton, Nordvik, Bille-Brahe, DeLeo & Fekete, 2002).

Another element of definition to consider relates to the directness of the behaviour. Claus & Vandereycken (2007) outline their preference for the term '*self-injurious behaviour*' because the term characterises the directness or immediacy of the act in that the link between the behaviour and the physical consequence is immediate. This is a useful distinction because of the wide range of behaviours that are sometimes referred to or linked with, self-injurious behaviours, such as eating disorders (Wright, Bewick, Barkham, House & Hill, 2009), substance abuse (Harned, Najavits, Weiss, 2006) and other risk taking behaviours (Vrouva, Fonagy, Fearon & Roussow, 2010). Limiting the definition to direct behaviours serves the purpose of narrowing the research focus to similar studies which may allow generalisation. Although the overlap of behaviours considered to be self-injurious may confound research efforts that are directed at gaining insight into different behaviours, there are also benefits in considering the overlap.

Nock (2010) outlines how the behaviours share common elements in that they all represent attempts to change affective, cognitive or social experiences, they cause bodily harm and they are associated with other forms of mental disorders. Nock also suggests that the commonality of these behaviours raises the question whether they should be considered along the same continuum. This would allow integration of research findings from diverse areas in order to advance understanding of why people hurt themselves in a variety of ways.

Another definitional problem arises from the distinction between self-injurious and suicidal behaviour. Some researchers describe self-injurious behaviours and suicide as lying along a continuum (Hooley, 2008). Individuals who support this perspective maintain that various forms of self-injury represent different degrees of lethality of self-injury (Wong, Stewart & Lam, 2007). For example, Ougrin & Latif (2011 pg. 74) defined self-harm as, '*self-poisoning or self-injury irrespective of the intent'*. However the alternative perspective is that suicide and self-injury are considered distinct

behaviours (Brown, Comtois & Linehan, 2002), although these authors do outline that there are overlapping risk factors.

To address the differences between suicide and self-injury, Suyemoto (1998) proposed an '*Anti Suicide Model'* in which self-injurious behaviour is carried out to channel self-destructive impulses in an attempt to avoid self-destruction in the form of suicide, thus proposing the behaviours as distinct. Part of the difficulty in reaching a consensus regarding definition of both concepts may be due to the broad range of outcomes of such behaviours (Farrelly & Francis, 2009). These authors further outline that, when considering the definition of self-injury and suicide respectively, the issue of intent has proved highly contentious. Intent in this context refers to whether an individual intended to die through the behaviour and commit suicide *or* whether the behaviour was non suicidal in which there was absence of intent to die (Nock, 2010).

There are intrinsic difficulties with using intent as a mechanism to distinguish between these behaviours in that it is based on self-report and assumes that individuals have full insight into their intentions and motivations and can then report these accurately to researchers (Usher, Power & Wilton, 2010; Hooley, 2008). Another difficulty with intent is that it is conceptualised as a dichotomous variable that is either present or absent (Prinstein, 2008). However, Bebbington et al. (2010) highlights that the concept of intent can be ambivalent in that some individuals may be unsure about whether they wanted to die. Additionally, death can occur from injuries that were inflicted without the intent to kill oneself whilst other individuals may engage in behaviours that may not end in death, but which were meant to end one's life (Farrelly & Francis, 2009).

Given the robust relationship between suicide and previous self-injury, the link between them is of significant relevance to clinicians who attempt to identify those at the highest risk of suicide (Bebbington et al.,2010). Identification of those factors which might place an individual at risk of self-injury could be used, for example, in suicide prevention research, intervention and as part of staff training. As such Prinstein (2008) highlighted that even very mild forms of self-injurious behaviours need to be taken very seriously as they may link with future suicidal behaviours.

Classification of self-injury

There have been attempts to define self-injurious behaviours using a classification system. Favazza & Rosenthal (1993) first developed a classification system (further modified by Simeon & Favazza, 1995). In their classification system, they describe '*self-mutilation'* as divided into three observable categories stereotypic, major and moderate/superficial. The last category was further divided into the three subtypes of compulsive, episodic and repetitive (Favazza, 1996).

Stereotypic self-injury is usually associated with other disorders such as autism (Wachtel, Griffin & Reti, 2010), Lesch-Nyhan[2] syndrome (McCarthy et al.,2010) and Tourette's syndrome (Berthier, Campos & Kulisevsky, 1996). The 'major' category refers to infrequent acts involving significant tissue damage such as eye enucleation, castration and limb amputation, and is most commonly associated with psychosis and acute intoxication (Favazza 1996). This type of self-injury is distinguished from stereotyped and moderate/superficial by its severe nature and discrete occurrence (Favazza & Rosenthal, 1993). The third category is that of 'moderate/superficial' which Simeon & Favazza state is characterised by skin cutting and burning. This is common behaviour which has been written about frequently in the press (Favazza, 1996). As previously stated, this category is further divided into the three subtypes: compulsive, episodic and repetitive. The behaviours involved in compulsive self-injury are more closely associated with Obsessive-Compulsive Disorder. An example of this type of self-injury is trichotillomania (hair pulling disorder; DSM-V: Stein et al.,2010).

Episodic self-injury refers to behaviour that occurs infrequently. The person may not think about it between episodes. However, it can escalate to repetitive self-injury which is more frequent in nature. In explanation of this category Favazza (1989b) states that the themes articulated for this type of self-injury are for example, tension release, return to reality, establishing control, influencing others and ventilating anger. Favazza (1996) outlines that moderate/superficial episodic self-injury may be present as a symptom or feature of disorders such as anxiety, depression, dissociative disorders, and personality disorders. This is the category that includes behaviours of interest for the current study.

[2] Lesch-Nyhan syndrome is a condition that occurs almost exclusively in males. It is characterised by neurological and behavioural difficulties which include self-injury such as repetitive head banging and biting (Genetics Home Reference, 2013)

The reason for the interest is that the motivations for these behaviours are least well understood but most frequently observed in forensic settings. Researchers support the premise that these behaviours should be considered distinct from stereotypic self-injurious behaviour seen in individuals with learning difficulties and from severe forms of self-mutilation such as limb amputation seen in psychotic individuals (Klonsky, 2007).

More recently it has been proposed that a new disorder of 'Non Suicidal self-injury' should be included in DSM-V when it was being revised (DSM Development, 2010). This was not a new idea as Pattison & Kahan (1983) had previously suggested a 'deliberate self-harm syndrome' be included in DSM IV as a separate diagnostic syndrome. This was not included however because self-injury was seen as an integral part of Borderline Personality Disorder (Shaffer & Jacobson, 2009). It was explained that the advantages of a separate disorder were improved communication, more precise definition and clearer prognostic and treatment implications (Wilkinson & Goodyer, 2011). There were also concerns about such a diagnosis, that it could increase the risk of stigmatisation, by being defined by a diagnosis as a 'self-harmer' rather than by the behaviour (DeLeo, 2011). An alternative perspective regarding stigmatisation was proposed by Glenn & Klonsky (2013) who outlined that self-injury has been categorised as a criterion of Borderline Personality Disorder (BPD) and that this assumes that self-injury is unlikely to occur without this diagnosis and, that self-injury does not have clinical significance outside of BPD. This could either mean that people are incorrectly diagnosed with BPD or that they are not given the intervention they need when they engage in self-injury but are not diagnosed with BPD. Whilst avoiding stigmatisation is a compelling argument, there are clearly equally compelling arguments for the consideration of a separate disorder.

A preliminary study on 'Non Suicidal self-injury disorder' (NSSI) compared a BPD group (with and without self-injury) to a control group and a group with self-injury. Results indicated group differences which supported that NSSI as a distinct disorder may be characterised by high levels of depressive symptoms, anxiety, suicidality and low functioning relative to other Axis I diagnoses (Selby, Bender, Gordon, Nock & Joiner, 2011). When DSM-V was published, NSSI was classified as a condition requiring further study due to insufficient evidence supporting its designation as an 'official mental

disorder' (American Psychiatric Association, 2013). One of the concerns with the disorder was that it failed to show acceptable inter rater reliability using clinician administered diagnostic interviews (Reiger et al. 2013). However, it was also outlined that there was difficulty in obtaining sufficient sample sizes to generate Kappa estimates (Clarke et al.,2013). More recently, Washburn, Potthoff, Juzwin & Steyer (2014) assessed NSSI in a clinical sample of 511 inpatients. They found amongst those patients being treated for self-injury 74% met the criteria for NSSI disorder. They reported that no differences in NSSI disorder were observed by sex, ethnicity or age. As such researchers (Ward et al.,2013) continue to encourage work in this area to build a foundation for future investigations into treatment and prognosis of the proposed NSSI disorder.

Defining the term within the current research

For the purpose of this research and the remainder of subsequent chapters, the term '*self-injurious behaviour'* will be used for those individuals whose intent is not death, as far as can be ascertained. Compared to '*non-suicidal self-injury'*, the term does not dictate that suicidal intent must be absent. Intent is a difficult concept to establish as discussed. However, within the current study, self-injurious behaviour is considered different from suicidal behaviour, in so far as intent can be understood or established. It is also important to reflect on the fact that terms such as '*self-mutilation'*, '*self-harmers'* and '*cutters*' can be used to further diminish the experiences of those who injure themselves and may reflect an interpretation of the researcher. For example the term '*self-mutilation*' implies that the intent was to '*mutilate*' in some way when in fact there are multiple potential motivations for self-injury.

It is therefore considered that '*self-injurious behaviour'* is as factual and objective a description as possible in an attempt to avoid further discrimination of individuals who engage in this behaviour. Indeed, Nock & Favazza (2009) outline that individuals who engage in the behaviour also prefer the term '*self-injury'* and refer to Martinson's (1998-2001) '*Bill of rights for people who self-harm*'[3] to illustrate this point. However, the

[3] 'The Bill Of Rights for People Who Self Harm (Martinson, 1998-2001) is a document which has been developed to try and provide information to professionals regarding some of the stigma associated with self-injury in an attempt to respond in a way that protects the individual and provides respect.

apparent synonymous use of the term '*self-harm'* in the title of the document and '*self-injury'* as the term of choice further outlines the ambiguity of terminology in this area.

Who self-injures and to what extent?

The explanation of who self-injures in exact terms is difficult to determine as research depends upon individuals volunteering information and on the sampling methods used. It is also important to remember that individuals are members of more than one discrete sub population meaning that results from the various studies could all apply to one individual. This section is split into the three sections of: self-injury within the general population, self-injury within clinical populations and self-injury within forensic populations.

Self-injury within the general population

This section concentrates on self-injury occurring with adults as this is the focus of the current thesis. However to outline the extent of the problem self-injury in children and adolescents will briefly be illustrated. Melzer, Harrington, Goodman & Jenkins (2001) conducted a survey of 10,438 people aged five to 15 years and found that, according to their parents, 1.3% of five to 10 year olds had at some point tried to hurt or kill themselves. It was however highlighted that further research exploring the function of these behaviours would also be beneficial. Hawton & Rodham (2006a) carried out a survey of 6,020 year 11 students and found that 13.2% of the young people questioned had tried to injure themselves at some point. Of note was the fact that only 12.6% of those who had engaged in self-injury had then presented to hospital. Wood (2009) concluded that because of the lack of medical attention sought, 80% to 90% of self-injury may remain unknown to professionals. Muehlenkamp, Claes, Havertape & Plener (2012) carried out a study focusing upon the international prevalence of adolescent self-injury. They conducted a systematic review of 52 studies regarding prevalence rates of self-injurious behaviour in adolescents. They found a mean lifetime prevalence of 16.1% to 18%[4]. Interestingly, the study also found that the assessment method used had a significant impact upon estimates of self-injury. For example, among the studies using the term '*deliberate self-harm'*, those assessments using a single item (dichotomous yes/no response) found an average lifetime prevalence of 12.5%, whereas those using

[4] This varied dependent upon whether the term '*Non Suicidal Self Injury'* or '*Deliberate Self Harm'* had been used. Within the current study they were considered separately.

multiple item or behaviour checklists found an average prevalence of 31.4%. The authors concluded that the type of assessment tool used to assess adolescent self-injury could contribute to potential bias in the estimates of prevalence.

One area of research which appears specific to adolescent self-injury is that of a *contagion effect.* Hawton, Bergen et al. (2012) have suggested that there is evidence of clustering of self-injury within adolescent populations. McMahon et al. (2013) state that the potential mechanisms by which contagion of suicidal behaviour among peers and family members' takes place is the subject of increasing attention. Within their study exposure to suicidal behaviour of others was examined among 3,811 adolescents. It was found that one third of the sample had been exposed to suicidal behaviour and exposed adolescents were eight times more likely to report their own self harm. A recent study (Swanson & Coleman, 2013) of 22,064 adolescents aged 12 to 17 supported the finding of a contagion effect. The study found that the suicide of a school friend magnifies the risk of suicidality for a young person regardless of whether the young person knew the deceased. This risk was reported as particularly strong for the group aged 12 to 13 who were five times more likely to have suicidal thoughts after exposure to a schoolmate's suicide than those who had no exposure. Those aged 14 to 15 years old were three times as likely and 16 to 17 year olds twice as likely. However it was acknowledged as a limitation that the proximity of relationship between the deceased adolescent and the participants in the study would warrant further investigation to eliminate the potential for confounding variables.

When focusing attention on self-injury occurring among adults, Tait, Brinker, Moller & French (2014) outlined that data on self-injury within the general adult population was sparse and that the majority comes from university samples. In one university sample of 3,000 students Whitlock, Eckenrode & Silverman (2006) also found a lifetime prevalence rate of 17%. Klonsky, Oltmanns & Turkheimer (2003) investigated the presence and correlates of self-injury in a large group of non-clinical subjects. Participants were 1,986 military recruits, 62% of whom were men. The results indicated that approximately 4% reported a history of self-injury. It was also noted that those who engaged in self-injury had more symptoms of personality disorder than those who did not self-injure. However it is important to note that within this study the data was taken from military recruits as part of a larger study on the assessment of personality traits. It

is possible that there was some bias to under reporting self-injurious behaviour, especially if the recruits considered they were still within an assessment period.

Within the general population, various demographic characteristics, such as sex, have been the focus of research in relation to their association with self-injury. As such, a sample of these findings has been reported here to provide context and potential links with the current study. Earlier research indicated that self-injury was more common among women than men (Schmidtke et al.,1996). Further to this, Smith, Cox & Saradjian (1998) described self-injury as a 'female phenomenon'. However, more recent research has indicated similar rates of self-injury between men and women, although men are more likely to report burning and hitting themselves, whereas women are more likely to report cutting and scratching themselves (Kerr, Muehlenkamp & Turner, 2010). Andover, Primack, Gibb & Pepper (2010) focused specifically upon the sex differences in self-injury. In their sample of 510 undergraduate students they found that the prevalence of self-injury did not differ between men and women. However this study did find that men were significantly older than women upon their first incident of self-injurious behaviour. A study by Gomez, Becker-Blease and Freyd (2015) hypothesised that abuse history which is relevant to both men and women would predict self-injury as opposed to gender. The study explained that the effect of gender on self-injury might arise from abuse history and abuse-related interpersonal factors, not gender itself. Participants were 397 undergraduate students. The results indicated that abuse history was a significant predictor of self-injury, whereas gender was not. However only 31% of the sample had reported abuse history and 77% of those who reported sexual abuse were female. This means that the sample of those who had been sexually abused and were male was comparatively small. The study indicates that gender could be misleading as a factor to consider in predicting self-injurious behaviour. It is possible that any differences that do exist between men and women engaging in self-injurious behaviour may reflect sampling techniques, researcher assumptions or stereotypes regarding men's' willingness to disclose behaviours that could be considered as self-injurious.

Self-injury in clinical populations

Self-injury and suicide are found to be elevated amongst those with psychiatric diagnoses. Mann et al. (2005) stated that more than 90% of individuals who commit suicide have a diagnosable psychiatric illness. A Swedish longitudinal study followed a

national cohort of 7,140,589 adults for eight years and found that all psychiatric diagnoses were strong risk factors for suicide among both men and women (Crump, Sundquist, Sundquist & Winkleby, 2014). Haw, Hawton, Houston & Townsend (2001) reported that, in a sample of individuals presenting to a general hospital for engaging in self-injurious behaviour, 92% met the criteria for a psychiatric diagnosis.

With regard to specific diagnoses, research indicates elevation of self-injurious and suicidal behaviours in a range of psychiatric diagnoses including; bipolar disorder (Esposito-Smythers et al.,2010, Clements et al.,2015), substance use disorders (Turner, Layden, Butler & Chapman, 2013; Nock et al.,2006; Olfson et al.,2005), post-traumatic stress disorder (Dixon-Gordon, Tull & Gratz, 2014; Smith, Kouros & Meuret, 2014), anxiety disorders (Chartrand, Sareen, Toews & Bolton, 2012; Gollust, Eisenberg & Golberstein, 2008), antisocial personality disorder (Garcia-Nieto, Blasco-Fontecilla, de Leon Martinez & Baca-Garcia, 2014; Balikci & Balibay, 2012), and psychotic disorders (Haddock et al.,2013; Mork et al.,2012). However in the case of schizophrenia, research indicates a smaller prevalence of suicides than in other disorders (Nock, 2014). The literature regarding psychosis and self-injury appears to be predominantly focused upon self-enucleation and amputation as these more severe behaviours appear to occur more frequently with psychotic illnesses (Munerato, Moure, Machado & Gomes, 2011; Large, Andrews, Babidge, Hume & Nielssen, 2008).

One mental illness that has been the focus of most attention is depression. Lonnqvist (2000) highlighted that depression substantially increases the risk of death and this is because of the suicide rate associated with this diagnosis. It is also highlighted that because depression is also associated as a symptom in disorders such as schizophrenia, substance abuse, personality, and anxiety disorders, the significance of suicidal behaviour in depression should be considered beyond a specific diagnosis of depression. Goldman, Nielson & Champion (1999) outlined that 15% of depressed individuals commit suicide, and 40% attempt suicide. Increased understanding and focus upon self-injurious behaviour within a population who are more likely to die by suicide relates to research earlier in the chapter that self-injury is the strongest predictor of later suicidal behaviours. In addition a recent longitudinal study by Tuisku et al. (2014) focusing on predictors of suicide attempts in adolescents with a diagnosis of depression over an eight year period, confirmed the previous findings; namely that among this population self-

injurious behaviour was the strongest predictor of suicide attempts. It should be noted that a major limitation within this study was the large female majority in the sample meaning that conclusions relating to males may be limited and gender differences could not be compared.

Nock and Prinstein (2005) highlighted that it may be important to consider whether depressive symptoms preceded or followed self-injury. Marshall, Tilton-Weaver & Stattin (2013) outlined a further possibility that potentially depressive symptoms and self-injury are found together because they arise from common underlying vulnerabilities. A longitudinal study was carried out to examine the direction by examining depression and self-injury across three time points with a year between each. The sample used was 506 adolescent students: 53% were boys, and 47% were girls. Depressive symptoms were measured using The Centre for Epidemiological Studies Depression Scale for Children (CES-DC) which was translated into Swedish. They found that depressive symptoms predicted increases in self-injury one year later, between the first and second time point of the study. Marshall et al. (2013) concluded that their results indicated that individuals were using self-injury to mediate depressive symptoms. Although the finding may demonstrate that self-injury is used to mediate depression, unless young people were monitored in this manner before engaging in self-injurious behaviour, it is difficult to ascertain whether depressive symptoms do come before or after the commencement of self-injurious behaviour.

Research also indicates links between self-injury and the broader concept of mental disorder, namely personality disorder. For example Ayodeji et al. (2015) found in a sample of 366 adolescents that those with personality disorder, assessed using the SCID-II, displayed more frequent and severe self-injury in comparison to those who were not assessed as having a personality disorder. It should be noted that literature highlights the controversy of diagnosing adolescents with personality disorder because of potential stigmatising effects (Courtney & Makinen, 2016). In an Indian study Nath et al. (2008) compared the presence of personality disorder in young people (age 15-24, n = 77) to older people (age 45-74, n = 29) in individuals engaging in self-injury. The most common personality disorder found in younger people was emotionally unstable (impulsive and borderline) personality disorders at 28.6%. In older people it was anankastic personality disorder at 34.5%. The study used the International Personality

Disorder Examination (IPDE) to assess personality disorder although guidelines for administration of this assessment indicate that it should be used with a minimum age of 18 (Loranger, 1999). Observations about this study also include the small sample size of the elderly group and the ethics regarding diagnosing adolescents with personality disorder whilst personality is still considered to be developing until the mid-twenties (Roberts, Caspi & Moffitt, 2001).

A growing body of research is continuing to develop examining the link between personality disorder and suicidal behaviours. For example, Ansell et al. (2015) found in a sample of 431 participants who were followed for 10 years, Borderline Personality Disorder (BPD) was associated with a history of ever having attempted suicide. They also found that Narcissistic Personality Disorder was associated with an increasing number of suicide attempts. However the majority of research carried out into suicide and personality disorder focuses upon BPD (e.g. Homan, Sim, Fargo & Twohig, 2016) which neglects potential findings regarding self-injury and other personality disorders. It is important to note that there is even less research into the link between personality disorder and self-injury than personality disorder and suicide. Nevertheless Eide et al. (2015) highlight that, even though most studies are focused on BPD, there is increasing evidence that other personality disorders are also associated with maladaptive affect regulation. Given that the majority of research focuses upon BPD and self-injury, it is worth highlighting findings regarding this particular disorder below.

One of the diagnostic criteria for BPD is, 'Recurrent suicidal behaviour, gestures, or threats, or self-mutilating behaviour' (American Psychiatric Association, 2013). It is the only disorder that includes self-injury as part of the diagnostic criteria in DSM-V (American Psychiatric Association, 2013). In a meta-analysis focusing on suicide in those diagnosed with BPD it was identified that individuals with BPD were 50 times more likely to commit suicide than the general population (Pompili, Girardi, Ruberto & Tatarelli, 2005). It is estimated that between 4% and 9% of individuals diagnosed with BPD will die by suicide (Zanarini, Frankenburg, Hennen, Reich & Silk, 2005; Linehan, Comtois, Murray, Brown, Gallop, Heard, Korslund, Tutek, Reynolds & Lindenboim, 2006). Research has further indicated that as many as 75% of individuals diagnosed with BPD will engage in self injurious behaviour (Kerr, Muehlenkamp & Turner, 2010). However it is important to note that self-injurious and suicidal behaviours form only one

of the criteria for a diagnosis for BPD; there are another eight criteria to establish a diagnosis against which an individual will be assessed to establish the presence of evidence for a diagnosis.

A discussion about sex differences and self-injury becomes important again because there has been reference to BPD as a 'female disorder' (Ruiz & Vairo, 2008). Earlier research indicated a higher prevalence of women diagnosed with BPD (e.g. Korzekwa, Dell, Links, Thabane, & Webb, 2008). However more recent research indicates no significant sex differences (Sansone & Wiederman, 2010). Banzhaf et al. (2012) outline how prevalence rates of BPD are similar across men and women. However the majority of clinical studies have included borderline women. The authors summarised, as a consequence, that there is very little data about the psychopathological features in men with BPD. Research has also indicated that men and women may experience differences in their experience of BPD symptoms. Hoertel, Payre, Wall, Limosin & Blanco (2014) found that women were more likely to experience suicidal/self-injurious behaviour, affective instability and chronic feelings of emptiness than men, whereas men were significantly more likely to experience impulsivity. Sansone & Sansone (2011) also outline that if men suffer from more antisocial features and are placed in prison settings studies will under-report the prevalence of men with BPD.

Significantly, research regarding BPD and self-injury or suicidal behaviours have highlighted some negative attitudes. Woolaston & Hixenbaugh (2008) highlight that terms such as 'time-wasters', 'manipulative', 'difficult' and 'attention-seekers' are used to describe individuals with BPD, and that BPD individuals are viewed as in control of their behaviours and are therefore manipulative and dangerous. Some of these perceptions are also evident within the recent research literature. For example, Verona, Sprague & Javdani (2012) referred to the self-injury of women with BPD as '*self-directed violence*' rather than the more commonly used terms of *self-harm* or *self-injury* which are not as judgmental. The attitudes towards those involved in self-injurious behaviour will be examined in Chapter 3. Literature demonstrates a link between self-injury and BPD, but it is also important to consider the impact of other co-morbid diagnoses on individuals who engage in self-injurious behaviour.

Complex or comorbid diagnoses and self-injury

Research also highlights the impact of co-morbid diagnoses on those individuals who engage in self-injurious behaviour. Gratz & Tull (2012), for example examined the potential moderation of borderline personality disorder and avoidant personality disorder among individuals with PTSD and frequency of self-injury. It was carried out on 61 patients. It revealed heightened levels of self-injury among only PTSD patients with comorbid avoidant personality disorder not borderline personality disorder. Co-morbidity of other disorders with BPD has also been studied. The National Comorbidity Survey Replication, the largest study of mental disorder in the United States, found that about 85% of people diagnosed with BPD would meet the criteria for another mental illness (Lezenwenger, Lane, Loranger & Kessler, 2007). For example, Reas, Pederson, Karterud & Ro (2014) found that comorbid bulimia nervosa with BPD was significantly related with increased suicide risk amongst women being treated for BPD. The authors concluded that co-occurring bulimia nervosa represents a significant marker for risk of life threatening behaviours in women with BPD. A study by Reas, Karterud, Pedersen & Ro (2015) further investigated the link between self-injurious and suicidal behaviour in individuals with BPD with and without bulimia nervosa. Participants were 483 adult women with a diagnosis of BPD. Of these 57 also met the criteria for bulimia nervosa. Those with a co-morbid diagnosis of BPD and bulimia nervosa were more likely to have harmed themselves or attempted suicide during a treatment period.

Stevens et al. (2013) examined the relationship between Post Traumatic Stress Disorder (PTSD) and attempted suicide in a population of 1,433 individuals who had been diagnosed with recurrent early-onset major depressive disorder. The study found that PTSD was an independent predictor of subsequent suicide attempts. The authors concluded that in those suffering this type of depressive disorder; PTSD was a subsequent vulnerability marker for attempting suicide. It has been suggested that PTSD may indirectly affect suicide risk by increasing the severity of cognitive and emotional factors (McKinney, Hirsch & Britton, 2017). The research by Stevens et al. potentially indicates that a co-morbid diagnosis of depression and other disorders may increase the risk for self-injurious behaviours. Evidence therefore indicates that having more than one psychiatric diagnosis is likely to increase risk for engaging in self-injurious behaviours.

Self-injury within forensic populations

The number of self-injurious incidents in 2012 in prisons was 23,158 from 6,761 individuals in England and Wales (Ministry of Justice, 2013). Self-injury rates are higher in secure settings than in general medical and psychiatric settings (Walsh, 2009). Bird & Faulkner (2000) highlight that there is considerable research to indicate that prisoners are at greater risk of developing mental health problems than individuals within the community and are therefore at an increased risk of suicide. Konrad, et al. (2007) outlined that suicide was the leading cause of death among prisoners. Mortality rates have been estimated as three times higher for prisoners than the general population in respect of suicide (Slade & Edelmann, 2014). Humber et al. (2012) found that prisoners who died by suicide were over nine times more likely than those in a control group (prisoners matched on age, gender, date of reception into prison and establishment type) to have been identified as at risk for self-injury or suicide whilst in prison. This highlights the importance of understanding self-injury as a risk factor for suicide. However, the area of self-injury within forensic settings remains an under researched area (O'Donovan, 2007). This is a concern given the finding that in forensic settings more lethal methods of self-injurious behaviour are employed due to restrictions placed on access to implements with which to cut (Livingston, 1997).

Bennett & Dyson (2014) indicated that year after year recommendations have been made to prevent self-injury because of the link to suicidal behaviours in prison. These recommendations have reportedly not been implemented. Bennett & Dyson focused upon why these recommendations were not being implemented and found six themes: there was a lack of knowledge about how to deal with self-injury (knowledge); attitudes from officers indicating that self-injury was used to manipulate staff (attitudes); officers seen as unsympathetic (emotions); an absence of skill to deal with self-injury (skill); the environment not being conducive to providing prisoners with time to talk about their behaviour (environment) and prisoners refusing to engage in recommended treatment (resisting treatment).

Lohner & Konrad, (2006) further highlight that prison research into demographic factors relating to self-injury can be contradictory. This may be as a result of difficulties in comparing results across countries, different operational definitions and varying selections of samples. Martin et al. (2014) also outline that some self-injury predictors

identified within research, such as being younger and having adverse life events, are common within prison populations and therefore lack predictive power. Research into self-injury in forensic settings tends to focus on individual and historical characteristics (Haw, Hawton, Houston & Townsend, 2001; Santa Mina & Gallop, 1998; Swogger, You, Cashman-Brown & Conner, 2011). For example, Borschmann et al. (2014) examined the prevalence of self-injury and suicide in 515 young offenders either serving community sentences or detained in custody in Victoria, Australia. Results from structured interviews demonstrated that 16% of participants reported self-injurious behaviour within the previous six months. It was found to be significantly more common among individuals who were serving custodial sentences. The study found that self-injurious behaviour was linked with recent bullying victimisation, expulsion from school, being the victim of assault, cannabis dependence, and risk taking in the previous year. With the exception of the factor 'recent bullying victimisation', all the identified factors were either individual or historical.

Along with a history of self-injury another risk factor to emerge from the literature within prison settings is psychiatric conditions (Fazel & Danesh, 2002). Vollm & Dolan (2009) focused upon self-injury by women prisoners and found that previous contact with a psychiatrist and symptoms of depression were independently associated with a history of self-injury. This study also noted that women who had never self-injured previously may begin to do so when incarcerated. Marzano, Fazel, Rivlin & Hawton (2010) interviewed 60 women prisoners who had engaged in self-injury and 60 women prisoners who had not. The aim of the study was to investigate the psychiatric morbidity in those women who had self-injured. Results indicated that the women who had self-injured were significantly more likely to have a psychiatric condition. The strongest associations with near lethal self-injury were current depression, presence of two or more disorders, history of psychiatric inpatient treatment and previous attempted suicide, especially in prison. A similar study by the same group of researchers was also carried out on male prisoners (2010). It was found that in a matched case control study of 60 male prisoners psychiatric disorders were present in all the individuals who had engaged in an act of near lethal self-injury. Interestingly, psychiatric conditions were also present in 62% of the control group (Rivlin, Hawton, Marzano & Fazel, 2010). The high occurrence of psychiatric conditions within a forensic prison population leads to the final

area for discussion within this chapter; self-injury within forensic psychiatric populations.

Appleby (1992; pg. 749) stated, '*psychiatric patients are the group above all others at risk of suicide*'. This has been a well-established finding for some time; Hawton (1978) compared self-injury carried out within a psychiatric setting (inpatient and outpatient) with self-injury carried out within a general hospital setting and found that the rate the behaviour occurred was over 50 times greater for the patients in psychiatric care. The majority of research that has been carried out regarding self-injury within forensic settings has focused on prevalence rates of self-injury within forensic hospitals. White, Leggett & Beech (1999) found that in a sample of 88 medium secure male patients that 45.5% had engaged in self-injurious behaviour. Similar figures were reported by Grey et al. (2003). They found that found 52.9% of 34 medium secure patients had committed at least one act of self-injury. Clearly this is a small population from which to generalise but it is taken from a very specific population. A study that focused upon self-injurious behaviour within the Peaks Unit, a high security Dangerous and Severe Personality Disorder Unit, found that in examining all patients admitted to the unit between March 2004 and February 2006, approximately 50% had self-injured at some point (Daffern & Howells, 2009). The study also found that patients were more likely to self-injure in the later part of their hospital stay. In a study focusing upon rates of self-injury amongst women within a high secure hospital it was found that 94% engaged in self-injurious behaviour (Bland, Mezey & Dolan, 1999).

Research concentrating on predictive factors for individuals within forensic psychiatric settings is also limited. Some research has been conducted regarding what self-injury may predict, but not what predicts self-injury within such a setting. Of the research looking at outcomes other than prevalence, Hillbrand, Young & Krystal (1996) found that forensic patients who engaged in multiple acts of self-injury were more frequently and severely aggressive and required longer hospitalisation than patients who engaged in self-injury on one occasion. Stinson & Gonsalves (2014) aimed to study the rates of suicide attempts and self-injurious behaviour within a sample of 1184 psychiatric patients whilst distinguishing between general violence and sexual violence. They highlighted that 482 individuals within the sample had committed sexual offences. The study found that those individuals who had committed sexual offences were significantly

more likely to engage in suicidal and self-injurious behaviours than those who had committed other types of offences. This finding could link to literature highlighting the experience and use of shaming mechanisms in individuals who have committed sexual offences (McAlinden, 2005).

Research examining why forensic patients self-injure at such a high rate is limited. As with self-injury in prison populations, there is a growing awareness of the importance of examining the social environment (Ireland & Quinn, 2007). Dickinson, Wright & Harrison (2009) considered the attitudes of nurses and support workers of young people engaging in self-injurious behaviours within a forensic population. They found some positive themes connected to sympathy and empathy for the young people. However antipathy from staff, judgement of behaviour as attention seeking, and labelling of the young people was also reported. Sandy & Shaw (2012) have also found that mental health nurses demonstrate mixed attitudes towards self-injury in secure forensic environments, and that in general attitudes are more negative. Marzano, Ciclitira & Adler (2012) suggests that forensic settings expose already vulnerable populations to additional risk, and that risk may depend on cumulative exposure to social, environmental and individual factors. Further research into the social environmental factors may be key to understanding self-injury within forensic settings and allow for prediction of risk. The impact of the social environment within forensic contexts will be considered in detail in Chapter 3.

Concluding comments

A large proportion of previous research has been concerned with some of the definitional challenges relating to self-injurious behaviour. Literature indicates that forensic populations may be a critical group to understand because of the high rates of self-injury and suicidal behaviours and with the addition of mental health difficulties. However, the research relating to correlates and predictive factors regarding individuals who self-injure within forensic settings is extremely limited. There has been some focus on the emerging importance of the social environmental impact of forensic settings upon self-injurious behaviour but without knowledge of historical and individual characteristics this is only one element of understanding the context in which self-injury in forensic settings occurs for an individual. As highlighted by York & Ireland (2012), in order to advance understanding focus has to shift towards testing and advancing theory in order

to understand self-injurious behaviour as opposed to merely describing it. The following chapter will examine the utility of existing theories of self-injurious behaviour and also outline the potential for the advancement of theory in testing a new model of self-injurious behaviour.

Chapter 3

THEORIES OF SELF-INJURY

Structure of the chapter

The chapter focuses on the different theories of self-injury under the broad category of integrated theories of self-injury. There are other theories such as biological and developmental, but these are not addressed within the thesis as other explanations of self-injury are the focus of the current research.

Integrated theories of self-injury

Barzilay & Apter (2014) highlight that, whilst there is a substantial amount of research relating to suicidal and self-injurious behaviour, there have been few attempts to fit the established information into an overarching integrated theory. Five models/theories will be considered within the current review; *The Cry of Pain Model* (Williams, 1997), *The Four Function Model* (Nock; 2004), *The Integrated Theoretical Model of self-injury* (Nock, 2010), *The Integrated Motivational-Volitional Model of Suicidal Behavior* (O'Connor, 2011) and *The Interpersonal Psychological Theory of Suicidal Behaviour* (Joiner, 2005). These five have been considered because they have either been applied to forensic and psychiatric settings, or they specifically include an explanatory mechanism for self-injurious behaviour. There are other models and theories, but these five all represent integrated approaches based on broader theoretical explanations. It is important to note that both models developed by Nock (2004, 2010) are the only ones specific to self-injury rather than inclusive of suicide. The only theory being examined (as opposed to a model) is the *Interpersonal Psychological Theory of Suicidal Behaviour* (Joiner, 2005) although this theory does include self-injury as a component which will be examined more fully. Finally a new model of understanding (The Integrated Model of Self Injury; Ireland & York, 2012) which is based on the Interpersonal Psychological Theory but which specifically accounts for self-injury will be discussed. This model has been designed specifically based on forensic samples and therefore is relevant to the current research.

The Cry of Pain Model (Williams, 1997)

To provide a context for this model, it is important to consider Baumeister's (1990) theory of *Suicide as Escape from Self*. Baumeister proposed that the motivation for suicide was to escape from negative self-awareness, suggesting that awareness of self-negativity makes suicide seem an acceptable escape route. Williams (1997) extended this theory to suggest that suicide was *also* a product of feelings of defeat which trigger perceptions of entrapment. Thus Williams & Pollock (2000, 2001) contend that suicidal behaviour should be seen as a 'cry of pain' rather than a 'cry for help'. The 'cry' is a response to a situation in which the individual feels defeated, has no means of escape and no prospect of rescue. In explaining self-injury Williams & Pollock (2000) propose that when an individual's attempt at escape appears to be blocked the initial responses are anger and protest. Individuals would then engage in less serious suicidal behaviour (i.e. self-injury) in order to re-establish escape routes, this representing a response to a stressful situation. Barzilay & Apter (2015) indicate how the model includes biological and psychological components, the presence of stressors, the presence of defeat, the perception of entrapment, and the perceived absence of rescue factors. The model then integrates psychobiological and evolutionary factors. For example, Williams & Pollock (2001) highlight that stress in the form of the prison environment and loss of social status may lead to feelings of defeat, unsuccessful attempts at problem-solving may lead to powerlessness, and a sense of entrapment may intensify feelings of hopelessness. In a prison or hospital setting, the possibility of 'rescue factors' in the form of social support may also be limited.

The Cry of Pain Model has been recently applied to an adult male prison population. Slade, Edelmann, Worrall & Bray (2012) focused on testing the model with adult male prisoners who were new arrivals in the prison setting. The study found that the strongest predictor of self-injury was a history of previous self-injury. As noted in the previous chapter this is an established finding cited in the literature. However, Slade et al. (2012) demonstrated that those prisoners who engaged in self-injurious behaviour also had higher levels of stress, more intense feelings of defeat, a greater external locus of control, and a poor perception of rescue. There were elements of the model that did not apply to prisoners, such as entrapment, which had been measured by a specific entrapment scale. Slade et al. (2012) suggested that the model explained self-injury within prisoners if you considered greater external locus of control as evidence for 'entrapment'. However, the

entrapment scale did not support this finding. There may be potential for research to examine whether prisoners who are physically trapped experience entrapment differently from those who may not be detained physically. There were further difficulties with this study; the sample size of those engaging in self-injurious behaviour was relatively small (n = 52), and the empirical evidence generated from this study and previous studies of the Cry of Pain Model do not yet appear robust enough to aid decisions concerning risk.

Slade & Edelman (2014) carried out a further study of 198 prisoners and hypothesised that the factors of the Cry of Pain Model would be predictive of suicidal ideation. The authors found that significant predictors of risk were previous self-injury or suicidal behaviour, the presence of suicide permissive cognitions, more intense feelings of defeat, and a greater number of times in prison. As with the previous study the entrapment scale itself did not differentiate significantly between those engaging in suicidal ideation and those who did not. A later study by Barzilay & Apter (2015) also highlights that, although there is support for various elements of the Cry of Pain Model, it remains untested within a single sample in its entirety. They also outline a difficulty with this model in terms of separating concepts such as hopelessness, depression, defeat, and entrapment as they all contain overlapping elements.

Four Function Model (Nock & Prinstein, 2004, 2005)

An alternative model to consider is the Four Function Model (Nock & Prinstein, 2004, 2005) of self-injury which was based upon two dimensions. The first dimension was that reinforcement could either be positive (gaining a positive stimulus) or negative (removal of a negative stimulus). The second dimension was that the behaviour was either for interpersonal or intrapersonal reasons. Nock (2009) explained that the development of such a model was important because previously research had focused on identifying and describing psychosocial correlates of self-injury rather than understanding why people engage in injuring themselves. Nock (2009) describes how the model results in the following four functions for self-injury; automatic negative reinforcement (i.e. self-injury to remove a difficult emotion or thought); automatic positive reinforcement (i.e. self-injury to generate positive feeling or thought); social positive reinforcement (i.e. self-injury to gain attention or access to something in the environment) and Social negative reinforcement (i.e. self-injury to remove an interpersonal difficulty).

Nock (2009) has attempted to explain *why* self-injury was used to serve these functions. Part of the subsequent explanation referred to cognitions about the self and how self-injury may form an attempt at 'self-punishment'. If this is the case it may represent a mixture of both automatic negative reinforcement (e.g. to remove feelings of shame) and also automatic positive reinforcement (i.e. to generate thoughts such as 'I have paid for my mistakes'). However these cognitions are not made explicit within the model, nor is there explanation about how an individual could self-injure for more than one motivation, or that the function/motivation could potentially change across time and even within the duration of the act. Bentley, Nock & Barlow (2014) highlight how the generation of positive affect may be as a result of the reduction of negative affect, offering this as an alternative explanation. Another limitation is highlighted by Nock (2009) when he states that other authors have identified functions beyond the four outlined within this model. Nock explains that this is because of a broader, '*more colloquial, use of the word function*' (pp.67). However, the distinction then made between the use of 'function' in this model and the broader term of function accepted in clinical practice appears unclear.

More recently the Four Function Model has been applied to offenders who self-injure. Power, Smith & Beaudette (2016) applied it to 201 prisoners who had engaged in self-injury in the past (56 women and 145 men). Over a third of functions for engaging in self-injury were deemed automatic positive reinforcement, 25% automatic negative reinforcement, 31.3% social positive reinforcement and 12.5% social negative reinforcement. The authors used these results to explain that the findings discredit the commonly held belief that offenders use self-injury primarily for attention seeking and manipulation. However there did not appear to be any explanation for the co-occurrence of more than one function or a mixed motive incident. The authors also summarised how there has been a lack of an empirically validated theory for self-injury within the offender population which emphasises the value of the current thesis.

One clear limitation of the Four Function Model is a lack of testing. There is some testing by Nock and Prinstein (2004, 2005) and more recently by Power et al. (2016) but not beyond this. There appears to be a limited amount of testing of the entire model within relevant populations to ascertain whether motivations for self-injury do fall into the four suggested functional categories. However, in terms of strength, Bentley, Nock

& Barlow (2014) highlight how other models of self-injury focus too narrowly upon the role of affect regulation in self-injury and overlook other functions, in particular social ones, whereas the Four Function Model does not. Selby, Nock & Kranzler (2014) have continued to test elements of the Four Function Model. Their study focused on the fact that automatic positive reinforcement was a function endorsed by 50% of their sample of 30 adolescents engaging in self-injurious behaviours.

The Integrated Theoretical Model of self-injury (Nock, 2009)

In 2009 Nock developed the Integrated Theoretical Model of Self Injury. Nock (2014) reports that this was developed because none of the existing theories of self-injury could account for engagement in self-injurious behaviour that was repeated. Nock (2009) proposed that some individuals have either/both intra or interpersonal vulnerabilities that predispose them to react to difficult situations with either social or affective dysregulation, with such dysregulation captured by the Four Function Model.

However, Nock (2010) explains how the Integrated Theoretical Model makes three major suggestions. The first is that self-injury is repeated because it can be an effective method of regulating emotions or the social environment. Second, that risk of self-injury is increased by certain variables that mean some individuals are predisposed to problems in regulating emotions or the social environment. Third, that the risk of self-injury is increased by several self-injury specific factors that lead a person to choose this behaviour rather than other maladaptive behaviours. Although individuals may choose self-injury over other maladaptive behaviours, the model does not explain why an individual may sometimes also choose an adaptive behaviour in place of self-injury. The model outlines how the vulnerabilities to social or affective dysregulation were potentially caused by factors such as childhood abuse, family criticism, and genetic predisposition to high emotion reactivity. Nock (2009) outlines how childhood abuse has been associated with subsequent changes in stress response and as such represents a pathway to increased emotional reactivity and difficulty in managing such a response. The model also highlights how distal factors may also have an impact on the development of the ability to manage difficulties, such as poor social and communication skills.

Nock (2009) further outlines that there are many ways to manage emotions. The question as to why self-injury is chosen is explained by the Integrated Theoretical Model's focus on specific vulnerability factors. It also outlines a number of hypotheses to explain engagement with self-injurious behaviour. The *Social Learning Hypothesis* explains how self-injury can occur after observing the behaviour in others. As discussed above there are social learning elements involved in self-injury. The *Self-Punishment Hypothesis* explains it as a form of self-directed abuse learned through criticism or abuse by others. The author suggested that this would explain why child abuse is related to subsequent behaviour. The *Social Signalling Hypothesis* is explained as using self-injury to communicate with others when other strategies have failed. The *Pragmatic Hypothesis* is the explanation that choosing self-injury is thought to be easier than behaviours such as drug taking or alcohol use. The *Pain Analgesia/Opioid Hypothesis* refers to how some who engage in self-injury experience little pain. This may be to do with elevated levels of endorphins in the body. Finally the *Implicit Identification Hypothesis* describes how individuals engage in self-injury because they have begun to identify with that behaviour as an effective means of achieving one of the other functions. Nock (2009) does outline at this point that it is unclear whether implicit identification with self-injury influences the initial choice to engage in the behaviour or develops as a result of the behaviour, and that this requires further research.

There has been no further research conducted into the Integrated Theoretical Model, only limited research examining individual elements (Bruffaerts et al. 2010 & Jacobson & Batejan, 2014; Selby, Nock & Kranzler, 2014). Although this theory is based on the assimilation of research gathered by Nock, the theory, like the Cry of Pain Model, does not appear to have been tested as a whole. It is also unable to account for occasions when self-injury is not actually the preferred behaviour, regardless of the presence of risk factors. This highlights the importance of broader environmental factors and also protective factors (i.e. those factors which provide psychosocial resilience; Rutter 1990). Finally, the model does not specify the types of cognition which may lead to self-injury. Slee, Garnefski, Spinhoven & Arensman (2008) outlined that self-injurious behaviour was often triggered internally and it would be important to try and help individuals work out what might trigger them, whether a thought or an emotion. Cognition is recognised as an area increasingly in need of study (Batey, May & Andrade, 2010). A model and a theory respectively which account for cognitions in relation to self-injury are the

Integrated Motivational-Volitional Model of Suicidal Behavior and the Interpersonal Psychological Theory of Suicidal Behaviour (Joiner, 2005).

The Integrated Motivational-Volitional Model of Suicidal Behavior (O'Connor, 2011)

O'Connor (2011) outlined that when developing the Integrated Motivational-Volitional Model of Suicidal Behaviour (IMV) there was now universal acceptance that suicidal behaviour was characterised by complex interactions between biology, psychology, environment and culture. It was also outlined that researchers needed to move beyond psychiatric categories to further understand suicidal behaviour. Further to this O'Connor outlined that it would be important to predict with sensitivity and specificity who will act on suicidal thoughts (or not) but also who will act on these thoughts and when. As such, it was outlined that IMV was developed through incorporating major components from predominant frameworks in a new model of suicidal behaviour which could also make predictions about the types of factors that distinguished between suicide ideators and suicide attempters. O'Connor (2011) describes the IMV as a three phase model based on three theoretical frameworks: *The Theory of Planned Behavior (TPB, Ajzen, 1991), The Diathesis-Stress Hypothesis (Schotte & Clum, 1987)* and *The Arrested Flight Model of Suicidal Behavior (Williams, 2001).* The IMV also includes concepts from the *Interpersonal Psychological Theory of Suicidal Behaviour* (Joiner, 2005) which will be reviewed next.

O'Connor (2011) describes that the proximal predictor of suicidal behaviour (*volitional phase*) is one's *intention (motivational phase)* to engage in the behaviour. Intention is determined by feelings of *entrapment* and these feelings are often triggered by *defeat* or *humiliation* appraisals which are often associated with chronic or acute stressors. O'Connor describes that the transition across these stages are determined by *stage specific moderators*. *Threat to self-moderators* included social problem solving, coping, memory biases and ruminative processes. *Motivational moderators* included thwarted belongingness, future thoughts, goals, social support and attitudes. Finally *volitional moderators* included capability, impulsivity, implementation intentions and access to means and imitation. It is described that in addition, *background factors* and *life events* which comprise the *pre-motivational stage* provide the broader biosocial context for suicide. When presenting this model initially, O'Connor outlined that it needed to be

tested further as only the separate components within the model had been tested and that these tests had been mainly within suicidal samples. It was also noted that it would be beneficial to identify protective factors which may extend the intention-behaviour gap.

In terms of using the IMV to focus upon self-injurious behaviour O'Connor, Rasmussen & Hawton (2012) focused upon the difference between those who think about self-injury from those who engage in the behaviour. When explaining the application of this particular model to self-injury, the authors' outline that the conceptualisation of the model is that self-injury is not simply a by-product of a clinical disorder. The authors also explain that the IMV is a new tripartite framework that provides a theoretical basis for factors associated with the development of suicidal ideation and the translation of these thoughts into suicidal behaviour. Although the authors reference suicidal ideation and behaviour, they then interchangeably discuss self-harm within the remainder of the article, and the participants are 5604 secondary school pupils. The results indicated that adolescents in an ideators or enactor group differed significantly from the controls on the pre motivational and motivational phase variables. Secondly it was found that the volitional phase variables (self-injury occurring in valued others and impulsivity) and the experience of negative life stress distinguished the ideators from the enactors. It was explained that relative to ideators, those who acted on their thoughts of self-injury were significantly more likely to have a family member and/or close friend who had self-injured and were significantly more impulsive. Dhingra, Boduszek & O'Connor (2015) replicated these findings in a suicide attempter versus suicide ideators sample from 1288 university students. Again, the study determined that the volitional phase factors distinguished ideation from action. One point to note within this study is that although the participants were split into groups relating to suicide attempts and suicidal ideation, the authors do reference self-injury and suicide synonymously which some researchers disagree with (Wilkinson & Goodyer, 2011). However, other researchers also refer to suicidal and self-injurious behaviours on a continuum which may be the perspective of Dhingra et al (2015) in this research.

In further studies there have been continued promising findings in terms of support for the IMV model. In a four year prospective study on patients hospitalised after a suicide attempt, O'Connor et al (2013) investigated the utility of defeat and entrapment in predicting repeat suicidal behaviour in a sample of suicide attempters. The participants

were 70 patients who completed a range of measures. Then four years later a nationally linked database was used to determine who had been hospitalised again in a suicide attempt. Over 4 years, 24.5% of linked participants were readmitted to hospital after a suicide attempt. In multivariate analyses, the study found that entrapment and past frequency of suicide attempts were the only significant predictors of suicidal behaviour.

There have also been some unexpected findings relating to the IMV model in some studies. For example, Tucker, O'Connor & Wingate (2016) conducted research on a student sample, specifically on the hypothesis from the IMV that defeat would be indirectly related to suicide ideation through feelings of entrapment. Participants were 174 students who were selectively sampled for the experience of recent suicide ideation. The IMV theory suggests that specific moderators influence the likelihood that feelings of entrapment develop when an individual feels defeated (threat to self-moderator) as well as the likelihood that suicide ideation develops then an individual feels trapped (motivational moderator). However, within the current study, mediation analysis indicated that feelings of defeat did not have an indirect effect on suicide ideation through increased feelings of entrapment as expected. In research by Dhingra, Boduszek & O'Connor (2016) a structural test of the IMV was carried out. Participants were 1809 university students recruited from three Universities. One of the unexpected results from this study which did not support the IMV model was that impulsivity was not significantly related to suicide attempts which is different to the findings of previous research on IMV and also to the suggestion of the model that impulsivity is singled out as key for facilitating the transition from suicidal thoughts to attempts.

Recent research by Forkmann & Teismann (2017) aimed to test the proposed IMV representation that perceived burdensomeness and thwarted belongingness moderate the association between perceptions of entrapment and suicide ideation. Participants were 480 individuals recruited using an online survey. The authors summarised that the results gave partial support for IMV in that entrapment and perceived burdensomeness were predictors of suicidal ideation. However, neither perceived burdensomeness nor thwarted belongingness moderated the association between entrapment and suicide ideation. The authors explained that their results indicated that the impact of entrapment on suicide ideation is not affected by high or low levels of perceived burdensomeness and/or thwarted belongingness which is in contrast to the IMV model assumptions.

The strength of the IMV model appears to be its integration of helpful theoretical frameworks to explain suicidal behaviour. There has been promising evidence developed in the explanation of such behaviour using the model as outlined above. One potential limitation is the merging of self-injury and suicidal behaviours. Anecdotally, individuals can engage in self-injurious behaviour without having any thought or intention to engage in suicidal behaviours. It is proposed that although there may be some benefits to considering the behaviours on a continuum, that there may be some benefits to developing a self-injury specific model in order to intervene with the behaviour before it impacts upon subsequent suicidal behaviour for example. The theory which is reviewed next, is a theory of suicidal behaviour, but does include a separate consideration of the link between suicidal and self-injurious behaviour. It is considered that this theory may support the consideration of how self-injury and suicide may be linked but may also benefit from separate examination.

The Interpersonal Psychological Theory of Suicidal Behaviour (Joiner, 2005)

The Interpersonal Psychological Theory of Suicidal Behaviour (Joiner, 2005) accounts for suicidal behaviour but also incorporates self-injury and provides a conceptual link between self-injury and suicidal behaviour. It suggests three components must be in place for an individual to choose to attempt suicide. The first is the *capacity* to carry out lethal self-injury. The second is *perceived burdensomeness*, that is the individual believing they are a burden on their loved ones and they would be 'better off' without them. The third component is *failed belongingness* which is the failure to feel part of a group or relationship. The theory explains that all three components need to be present before suicidal behaviour can be enacted (Stellracht et al. 2006). It also extends to include those more likely to die by suicide and those individuals who may be thinking about suicide (Riberio & Joiner, 2009).

The *capacity* or ability to carry out suicide is acquired through certain types of experience (Joiner, 2005). The model acknowledges that suicide is a difficult action to take because of the high levels of pain and fear associated with the decision. Joiner (2005) explains how severe self-injury can also induce high levels of pain and fear, but in doing so can habituate individuals to this behaviour, moving them towards suicide. In this model it is suggested that other life threatening experiences, such as being involved

in the military, war, or being in a car crash, might habituate an individual to the potential pain associated with suicide. Joiner explains that to be competent at anything one must have practice and experience. There is some support for this notion from Nock et al. (2006) who found that the likelihood of suicide attempts is greater amongst individuals who have a longer history of self-injury, use a greater variety of methods, and report an absence of physical pain during self-injury that may be suggestive of habituation and tolerance. Joiner (2005) also suggested that previous childhood sexual abuse habituates people to pain and provocation and lowers their resistance to self-injury. Additionally, those individuals who behave in a more impulsive manner are more likely to acquire the capacity for lethal self-injury because of the tendency to experience more risky situations. In a specific test of capacity Van Orden et al. (2008) used a scale to measure this construct and found that the number of past suicide attempts significantly predicted levels of capacity in a clinical sample. Van Orden et al. (2010) highlighted that there were some indicators of acquired capacity which included; impulsivity, exposure to suicides, combat exposure, suicide attempts, and childhood maltreatment. Very recent research by Willoughby, Heffer & Hamza (2015) has conducted the first empirical test regarding the link between self-injury and acquired suicide capability. This longitudinal study was carried out over a five year period with 1,132 students. The results indicated that self-injury appeared to lead to a higher capability for suicide over time. Willoughby et al. (2015) outlined how higher frequency of engagement with self-injury predicted a higher capability for suicide over time; this was following control for other risk factors, such as sex, age and anxiety. Finally, the authors highlighted the importance of the study in outlining the long term nature of the link between self-injury and acquired capability for suicide in the future.

When focusing upon *perceived burdensomeness,* Joiner (2005) explained how this is the view that one's existence places a burden on family, friends and/or society. It also produces the idea that death is worth more to others than the person continuing to live. Joiner (2005) argues that individuals who feel a sense of perceived burdensomeness not only feel ineffective themselves but that this has a negative impact on those around them. In an earlier study, Joiner et al. (2002) examined the suicide notes of individuals who had died by suicide to those who had attempted and survived (the distinction was unknown to raters). They found that perceived burdensomeness was the only unique predictor of death by suicide. Motto & Bostrom (1990) identified 3,005 psychiatric patients who

were at risk of suicide. Of 38 who died by suicide, one of nine identified risk factors was being a burden on others. Further to this Van Orden et al. (2010) also outlined that 'distress from incarceration' was an indicator of perceived burdensomeness and that this may indicate why there were increased levels of suicide within prison or incarcerated populations.

In explaining *failed belongingness,* Joiner (2005) outlines that belonging is a fundamental human need and that when it does not occur it can have a number of negative effects on an individual. There were two components of the need to belong: interactions with others and a feeling of being cared for. In order to meet the need to belong the interactions an individual has must be frequent and positive. This will only be partially met if the individual feels cared about but does not have face-to-face interactions with others (Joiner, 2005). This obviously has relevance within forensic settings whereby individuals are forcibly separated from their loved ones. Joiner (2005) notes how failed belongingness is crucial and how if the need to belong was satisfied, even when perceived burdensomeness and capacity were in place, that the sense of belonging could prevent suicide. Joiner highlights that in a study carried out by O'Reilly, Truant & Donaldson (1990) which examined psychiatrists' reports on their patients' suicides, three variables were observed in the month before suicide. These three variables were feeling a burden on others, social withdrawal, and thwarting help. Joiner suggested that thwarting help may also be representative of interpersonal disconnection and thus a form of failed belongingness.

Van Orden et al. (2008b) further investigated the relationship between belongingness and suicidal ideation across academic semesters. In the summer semester, when there was less attendance, there were lower levels of belongingness. The authors found that belongingness mediated the relationship between semester and suicidal ideation. The findings were different from the general population where suicide tends to peak in spring rather than summer. This led Van Orden et al. (2008b) to suggest that patterns of belongingness across specific social groups may be an area worthy of future investigation. In a later study, Van Orden et al. (2010) further specified that failed belongingness should be seen as a dynamic cognitive affective state rather than a stable trait. They explained that this state could be influenced by an individual's actual social environment, activated interpersonal schemas, and also current emotional states.

The first test of the Interpersonal Psychological Theory of Suicidal Behaviour was carried out by Orden, Witte, Gordon, Bender & Joiner (2008). Participants were 309 undergraduate students. The interaction between failed belongingness and perceived burdensomeness predicted suicidal ideation. Higher levels of capacity were found among individuals with greater numbers of past suicide attempts. The results also indicated that previous painful experiences significantly predicted capacity levels. Further research by Joiner et al. (2009) tested the theory through two further studies. Both studies were based on a sample of 815 individuals. Study 1 tested the interaction between failed belongingness and perceived burdensomeness and whether they predicted suicidal ideation beyond depression indices. Study 2 focused on the three way interaction between failed belongingness, perceived burdensomeness and capacity and whether this predicted suicide attempts in a clinical sample of young adults. Study one found that individuals with low family support and low mattering to others experienced the most severe levels of suicidal ideation. Joiner et al. (2009) also highlighted that the two variables predicted suicidal ideation beyond the contribution of depression. Study 2 indicated that the three way interaction of the three major components of the theory (low belonging, perceived burdensomeness and lifetime number of suicide attempts) predicted whether or not participant's suicidal behaviour resulted in ideation or an attempt. There were, nevertheless, problems with this study; capacity was defined by number of previous suicide attempts which was a rather crude measure. However, Joiner (2005) outlined how there was a range of experiences that may provide basis for capacity to develop.

Gordon et al. (2010) did apply the Interpersonal Psychological Theory of Suicidal Behaviour to self-injury, using 106 individuals with a history of self-injury. Findings indicated that those reporting more incidents of self-injury over their lifetime reported feeling more relieved following their most recent incident of self-injury. This supported the original predictions that the experience of negative feelings would decrease, and positive feelings increase. However the study found higher numbers of self-injury were associated with greater physical pain during the most recent incident of self-injury which was the opposite finding of the original prediction that those who had experienced the most incidents of self-injury would experience the least pain. Gordon et al. (2010) suggested that due to the reinforcing properties of self-injury in terms of managing affect

that individuals may need to carry out more severe acts each time in order to lead to more severe pain. It could be speculated that, in Joiner's original discussion of the theory, both pain and fear were discussed in terms of capacity and the Gordon et al. (2010) study only examined the role of pain as the habituating factors. Perhaps capturing a measure of fear before the most recent incident of self-injury may have been more helpful and further research would be useful.

The Integrated Model of Self Injurious Activity (Ireland & York, 2012)

Finally, research conducted by Ireland & York[5] (2012) applied the Interpersonal Psychological Theory of Suicidal Behaviour (IPTSB; Joiner, 2005) to self-damaging behaviours in a sample of women adult prisoners. Findings supported the capacity component of the Interpersonal Psychological Theory of Suicidal Behaviour indicating that an increased history of engagement in self-injurious behaviour was a predictor for future self-injurious behaviour and cognition. Ireland & York (2012) also highlighted that the Interpersonal Psychological Theory of Suicidal Behaviour could be extended further in order to account for propensity to engage in self-injury by the inclusion of temperament factors such as personality and coping styles. A revised model, *The Integrated Model of Self Injurious Activity*, (see Figure 1.1) was proposed to account for the importance of cognition and the availability of methods not addressed by the Interpersonal Psychological Theory of Suicidal Behaviour.

Barzilay & Apter (2014) highlight that it remained unclear why individuals who have capacity within the IPTSB model do not always take the decision to engage in suicidal behaviour. Protective factors were also included in the revised model as potential mediators, although the authors acknowledge that the specifics of what to include are limited due to lack of research in this area. The model also highlighted the importance of the social environment. This is the next area of discussion.

[5] This is research carried out by the current author; previous surname York, is now Caton.

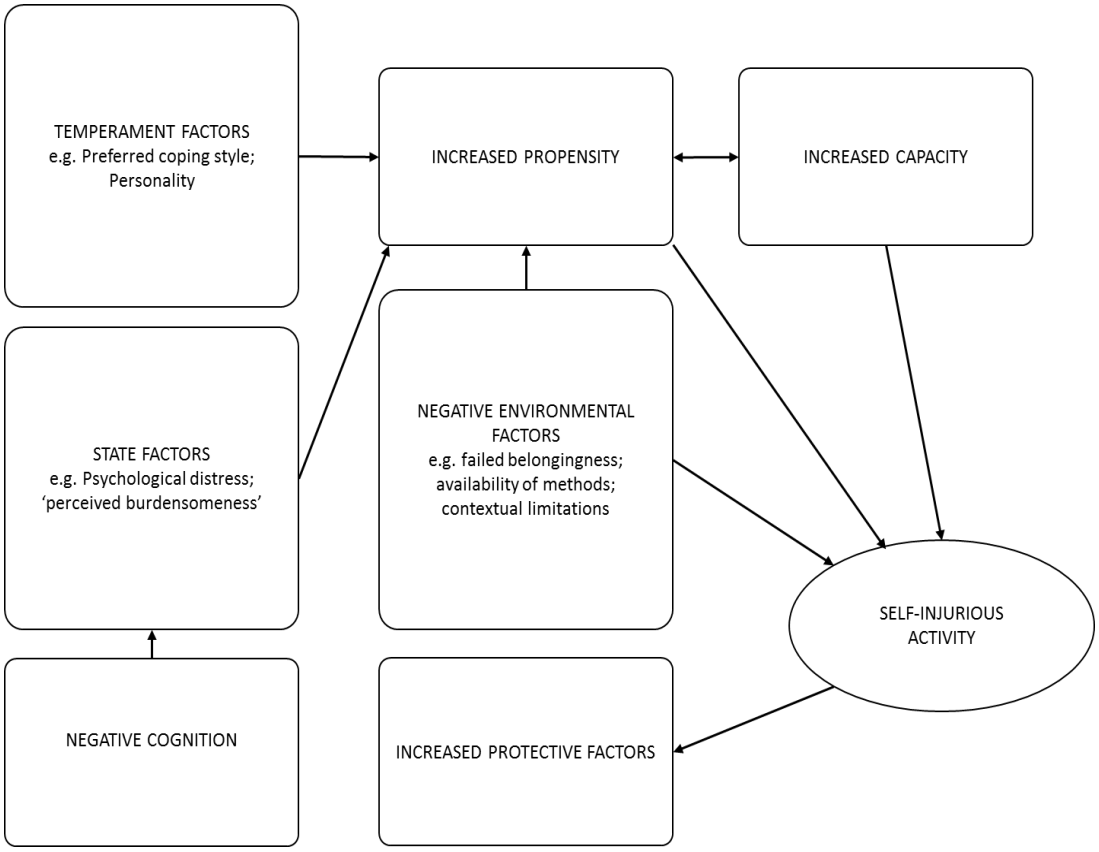

Figure 3.1: The Integrated Model of Self Injurious Activity (Ireland & York, 2012)

The social environmental context for self-injury

Magnusson & Stattin (2006) describe how individuals are part of a complex, integrated, dynamic person-environment system. They describe the environment in three categories; the *immediate situation*, the *proximal environment* and the *distal environment*. It is explained that an individual's current functioning always takes place in a situation with specific features. Through continuous integration of new information into new and existing mental categories each person will develop a system of mental structures involved in continuous interaction with the environment – the *immediate situation*. The proximal situation is where the immediate situations take place such as school, home, neighbourhoods, and social clubs. These settings offer opportunities for relationships with family members, friends and other individuals. Magnusson & Stattin (2006) describe how proximal environments are dependent upon the characteristic socio-cultural and physical level characteristics designated as the *distal environment*. Magnusson & Stattin also highlight that from a holistic model which incorporates the individual and the environment as one system, of particular interest is the role played by the individual's interpretation of what happens in the *proximal environment* and cognitions about

potential outcomes of their own actions. In the context of the current study it is important to note that the proximal environment within general society may involve a range of factors such as work, family, home, neighbours, friends etc. However, when placed in a secure forensic setting the proximal environment becomes much more limited.

Heilbron, Franklin, Guerry & Prinstein (2014) also noted that, in order to develop the field of suicide and self-injury, research aimed at understanding the *interactive* effects of intrapersonal factors and social and ecological contextual factors is needed. They highlighted how the majority of research has been carried out regarding the individual, (e.g. a psychiatric diagnosis), but that social and environmental factors are of critical importance.

The forensic environment

Prison can result in deterioration in mental health, exacerbate existing vulnerabilities and increase the risk of self-injury (Bradley, 2009). Goomany & Dickinson (2015) identified four major themes relating to the impact of the prison environment; social, emotional, organisational and physical. Social includes how a prisoner's mental health is affected by long periods of isolation – sometimes being locked in their cells for up to 23 hours per day. Within the Goomany & Dickinson (2015) review prisoners had expressed the importance of activity because longer periods of inactivity were associated with thinking about loved ones. When referring to the emotional impact of prison both men and women prisoners experienced psychological distress as a result of the forced separation from their families. Security procedures associated with family visits also disrupted social contact leading to some prisoners turning down visits in order to avoid distress for relatives. In relation to organisational impact loss of autonomy was experienced. Prisoners noted that the loss of decision making ability, even concerning minor decisions, had a negative impact on their psychological health. In relation to the physical influence of prison, overcrowding was presented as the main issue. Goomany & Dickinson (2015) highlighted how overcrowding meant living in close proximity with individuals suffering from severe mental health problems, disengaging from drugs, and engaging in antisocial behaviour all of which may contribute to higher levels of psychological distress.

When designing a new psychiatric facility Dvoskin et al. (2002) stated that the literature concerning forensic psychiatric facilities was sparse. This finding was replicated in the current study when searching for information relating to the forensic psychiatric environment. Edgerton, Ritchie & McKechnie (2010) said that a growing body of evidence has suggested that the physical environment may play a significant role in the treatment of patients. Gross, Sasson, Zarhy & Zoher, (1998) provided an account of a psycho-environmental approach whereby the physical design was considered in terms of the therapeutic benefits it may have within a psychiatric setting. Gabb, Speicher & Lodl (1998) suggested that some of the positive changes to the environment may include moving furniture to promote more socialisation in social areas and allowing more privacy in private areas. Sine & Hunt (2009) also outlined the importance of reducing noise within psychiatric settings and the subsequent positive impact this could have on mental health. Although the evidence presented here is limited, it does prompt consideration about the effect of prison and secure hospital settings on the proximal environment for individuals. Before incarceration individuals may be subject to a number of proximal environmental influences such as family, friends, associates, neighbours, work, school, education. However, once detained, it is possible that the proximal environment becomes much more synonymous with the secure environment. If a forensic environment does become a primary proximal environment for an individual, then the others within this environment become critically important, as highlighted by Barnett & Casper (2001) who note the importance of social relationships. It therefore becomes essential to consider the social environmental context. The next section will note the impact of a specific element of this social environment, namely the attitudes of staff and individuals towards self-injurious behaviour.

The importance of attitudes and attitude theory

A theory of particular value which incorporates personal and social values through consideration of attitudes, subjective norms, behavioural intentions, and actions is The *Theory of Reasoned Action* (Fishbein & Ajzen, 1980), later revised to the *Theory of Planned Behaviour* (Ajzen, 1991). It states that the most important predictor of whether or not an individual engages in behaviour is their *behavioural intentions*. Intentions are predicted by three variables; *attitudes*, an individual's positive or negative evaluation of self-performance of behaviour, *subjective norms*, an individual's perception about

relevant others' beliefs about the behaviour, and *perceived behavioural control,* an individual's perceived ease or difficulty in performing the chosen behaviour.

The Theory of Planned Behaviour has been empirically supported in a number of health-related research domains including self-injury (O'Connor, Armitage & Grey, 2006). In applying the theory of planned behaviour, the *attitude* element represents attitudes (either positive or negative) towards engaging in self-injurious behaviour; the *subjective norm,* the perception of the individual that their behaviour will receive some reinforcement from those around them; and the *perceived behavioural control,* to the control the individual may feel they have over injuring themselves. Whilst no studies have looked at the attitudes of individuals within secure settings engaging in self-injury there are some studies that have focused on the applications of attitudes to understanding self-injury.

O'Connor & Armitage (2003) applied the Theory of Planned Behaviour to parasuicidal[6] behaviour in order to try and use a social cognition model to predict the behaviour with an aim of intervening before the behaviour occurs. O'Connor & Armitage (2003) included two additional variables of *moral norm* and *anticipated affect* to the model. Moral norms were described as personal feelings or responsibility in relation to certain behaviour in contrast to subjective norms that include social pressure. Anticipated affect was described as how individuals rate they will feel after engaging in a behaviour. Participants within this study were 11 patients admitted overnight to an acute ward and a group of 33 hospital controls. The research was based on a limited sample. Findings indicated that all of the Theory of Planned Behaviour variables, including the additional factors of moral norms and anticipated affect, distinguished between those who had ever self-injured and those who had never self-injured. The Theory of Planned Behaviour variables explained almost 50% of the variance associated with intention to self-injure with moral norm explaining additional variance, although anticipated affect did not. The authors summarised that the results indicated how at-risk patients could be screened using these variables – screening for those who present with 'high risk' elements of social cognition variables. A point to note, however, is that it was not hypothesised why anticipated affect did not contribute to the variance associated with intention to self-injure. This characteristic, when considered in connection with the research primarily

[6] Parasuicidal behaviour is any non-fatal act in which an individual deliberately causes self-injury or ingests a substance in excess of any prescribed or generally recognised dosage (Kreitman, 1977).

summarised by Nock (2010) concerning the importance of self-injury in regulating affect, seems sensible to consider further.

Lewis, Rosenrot & Santor (2011) focused on one core aspect of affect, depressive symptoms and the Theory of Planned Behaviour components as predictors of self-injury intent. Participants were 62 individuals with a history of self-injurious behaviour. The results indicated that greater degrees of depressive symptoms were associated with a stronger intent to self-injure. The study also found that viewing self-injury as more acceptable was associated with an increased intent to self-injure in the future. This study also focused on self-injury frequency and found that for individuals with a more frequent history of self-injury only favourable attitudes remained a unique predictor of intent to self-injure. The authors hypothesised that this may suggest that individuals reinforce attitudes supporting self-injury the more often they undertake it. This may present an interesting finding if combined with the Interpersonal Psychological Theory of Suicidal Behaviour's view that individuals appear to habituate to the fear/pain involved in self-injury. Another interesting finding outlined by Lewis et al. (2011) was that in the higher frequency self-injury group depressive symptoms did not remain a significant predictor of intent, although it did in the lower frequency group. Lewis et al. suggested that this may indicate that that intent to self-injure may be better predicted by other factors, such as attitude, or mood, that are more acute in nature. Within forensic settings both depressive symptoms and frequency of self-injury are found to be high, as outlined in Chapter 2.

Further research carried out by O'Connor, Armitage & Grey (2006) aimed to investigate the extent to which social cognitive variables could mediate the effects of past self-injurious behaviour and predict self-injurious behaviour within the following three months. They also compared the variables within the Theory of Planned Behaviour to recognised factors implicated in self-injurious behaviour; hopelessness, depression and anxiety. This study included 90 participants who were admitted overnight to an acute ward. The results indicated that, in a final regression model, factors of affective attitude, self-efficacy, group identity, and descriptive norms were significant predictors of intention to engage in self-injury within the following three months. They also demonstrated that depression was the only clinical variable to explain variance in self-injury intention beyond the social cognitive variables identified. Results further

indicated that self-efficacy, (a proposed element of perceived behavioural control), was more strongly related to one's intention to engage in self-injury than depression. It was found that the social cognitive factors explained an additional 23% of variance beyond the effects of the three clinical variables (hopelessness, depression and anxiety) and that social cognitive variables may represent another area for intervention within self-injury. This study also indicated the importance of group identification and how beliefs about self-injury from others (peers, friends, those around them) can have an effect on intention to engage in self-injury. Therefore the rest of this chapter will focus upon the social context of forensic settings and how this may impact upon motivation to engage in self-injurious behaviour.

If the Theory of Planned Behaviour is applied to the attitudes and behaviour of staff the *attitude* element may represent attitudes (either positive or negative) regarding individuals engaging in self injury; *the subjective norm* of the perceptions of other staff may offer reinforcement and *perceived behavioural control* to the control the individual feels they have in working with individuals who are engaging in self injury. There has been some research carried out regarding the impact of the attitudes of others towards individuals who self-injure, but much less research than historical and individual characteristics for self-injury. Dickinson & Hurley (2011) noted a dearth of empirical studies conducted about the attitudes of those working within secure environments with individuals who self-injure. Gagnon & Hasking (2012) have highlighted that, as attitudes have the potential to impact behaviour, an understanding of attitudes held by professionals is essential to promote positive treatment outcomes. This echoes the earlier commentary of Morgan & Priest (1991) who suggested that the attitudes of others might be as important as the psychopathology of the person harming themselves. In order to outline the development and impact of attitudes of staff towards individuals engaging in self-injury it is useful to consider some of the research relating to attitudes displayed in general towards individuals who self-injure and also examine the available research on staff attitudes in forensic settings.

Research conducted into more general attitudes towards self-injury has focused on nurses. McAllister, Creedy, Moyle & Farrugia (2002) explored the attitudes of 249 emergency department nurses towards individuals who self-injure. Results indicated generally negative attitudes towards individuals who engaged in self-injury. The study

indicated endorsement of statements such as 'self-harm clients just clog up the system' and 'clients who deliberately self-harm are just attention seekers'. However the study also indicated that if the nurses felt skilled in dealing with self-injury they were less likely to demonstrate negative attitudes. Hopkins (2002) carried out an ethnographic study into the attitudes of nurses who worked on medical wards with admissions of individuals who had self-injured. Hopkins (2002) found that people who harm themselves are considered to have a reduced entitlement to care in comparison to '*really ill, poorly people'*. One participant stated, '*we wouldn't prioritise spending time with these patients'*. If the Theory of Planned Behaviour is loosely applied the attitude towards individuals who self-injure would be viewed as generally negative. Thus the subjective norm of such nurses is to have a generally negative view of those who self-injure. Perceived behavioural control also appeared to be a factor as the staff did not feel they had the skills to manage the behaviour. This might negatively affect the individuals who are being cared for. These negative attitudes would certainly raise questions, particularly about the impact on components of the Interpersonal Psychological Theory of Suicidal Behaviour such as failed belongingness (i.e. 'we wouldn't prioritise spending time with this patient') and perceived burdensomeness (i.e. 'you're not as in need as the really ill people').

One study has looked at the attitudes of psychologists towards self-injury and suicide (Gagnon & Hasking, 2012). Eighty-one psychologists (clinical, counselling, forensic and child) took part. Overall, younger, less experienced psychologists demonstrated more confidence in the assessment and referral of self-injurious individuals than their older, more experienced colleagues. The authors suggested that the younger psychologists may have undertaken relevant training more recently, thus explaining their increased confidence levels. Generalising from this study is clearly limited by the risk of biased responding. Socially desirable responses given by the professionals may not be adequately considered. However the study does indicate that the more professionals understand about self-injury, the more positive their attitudes.

Little research has been carried out exploring the attitudes of staff towards self-injury within secure settings. Ireland & Quinn (2007) examined the attitudes of prison officers towards adult male prisoners who engaged in self-injury and also explored whether these attitudes altered as a function of the prisoner's behaviour and the sex of the prison

officer. One hundred and sixty three officers took part in this study using the Attitudes Towards Prisoners who Self-Harm Scale' (ATPSH) developed for the purpose of the study. The participants were given two fictitious scenarios, each outlining an incident of self-injury, one by a disruptive prisoner and one by a well behaved prisoner. The ATPSH produced responses falling into four factors; attitudes endorsing the negative treatment of self-injuring prisoners; a positive understanding of self-injury; endorsement of myths relating to self-injury; and a belief that self-injury was closely linked with suicide. The study also found that attitudes varied as a function of the behaviour involved in the self-injury. More positive attitudes were indicated towards the well behaved prisoner scenario. Ireland & Quinn (2007) summarised how some of the improvement in care of those who self-injure could be aimed at educating prison staff about elements of self-injurious behaviour.

A later study by Marzano, Ciclitira & Adler (2012) researched the impact of prison staff responses on prisoners who were engaging in self-injury. Twenty prisoners were recruited on the basis that they had engaged in self-injury at least twice within the last month, but without any apparent suicidal intent. Qualitative analysis was used to analyse the interviews that were conducted with the prisoners. Themes such as officers not caring or understanding were common. This was also echoed in the attitudes of the healthcare staff with prisoners describing how staff were rude and judgemental towards them. Prisoners said that staff reacting in these negative ways made them 'close up' and 'made the situation worse'. Interestingly the study also asked for desired responses from the staff to which prisoners gave responses such as 'support, respect, care, and understanding'. Marzano et al. (2012) indicated the importance of investigating the attitudes of both staff and prisoners within this context.

Dickinson & Hurley (2012) focused on the antipathy of 69 nursing staff who worked within young offender institutions or secure forensic units. The study found that antipathy reduced if respondents received education relating to self-injury, and that the longer the nurse had been registered the more antipathy they displayed. The study also found that for those who were not mental health nurses antipathy scores were higher. There was a qualitative component to the study that found some of the negative labels applied to the young people for whom they cared were, 'PDs (Personality Disorder)', 'attention seekers', 'manipulators', and 'difficult patients'. It was summarised that one

of the components of caring for these young people was positive regard, and that labelling, as outlined within their study, was casting judgement on the young people and had the potential to cause a breakdown in communication with them. An adverse effect of such communication was thought to be the possible exacerbation of self-injurious behaviours in the young person.

This study was followed by Sandy (2013) who researched the views of nurses about motives for self-injurious behaviour. Twenty-five psychiatric nurses working with adolescents within a secure service were interviewed. Some of the motives for self-injury from the perspectives of these participants included; affect regulation, communication of distress, regaining control, punishing self, manipulating others and seeking attention. Sandy (2013) further identified some disagreement about the latter motive. Participants highlighted that sometimes this behaviour was carried out in private therefore was unlikely to be motivated by the need to seek attention.

Muehlenkamp et al. (2013) carried out a further study looking into the impact training professionals about self-injury would have upon subsequent attitudes. A sample of 342 individuals comprising of psychologists, social workers, psychiatric nurses and medical nurses took part. The results indicated that those who had received more training reported significantly more perceived knowledge, comfort and empathy. This was particularly the case for psychologists. The study also indicated that those who worked within mental health fields reported more positive attitudes than those professionals who worked within non mental health medical fields. Muehlenkamp et al. (2013) highlighted that the most important outcome from their study was the finding that increased training about self-injury is strongly associated with higher levels of positive empathy.

Overall research examining the attitudes of staff regarding self-injury suggests that negative attitudes are more commonly cited than positive, caring attitudes. These attitudes form a part of the social environment within secure settings. Of potential significance is the component of subjective norms (i.e. perceived social pressure/acceptance) which is in part determined by the behaviour of others. Therefore prison staff and nursing staff, as the largest groups of professionals within secure settings, are likely to contribute to social norms that are associated with individuals' attitude to self-injury.

Concluding comments

This chapter has highlighted key theoretical approaches in understanding self-injurious behaviour. Integrated theories such as the Interpersonal Psychological Theory of Suicidal Behaviour (Joiner, 2005) and the Integrated Model of Self Injurious Activity (Ireland & York, 2012) have combined empirical research from a range of theories and demonstrated some promise in providing a more holistic understanding of self-injurious behaviours. One area significant in need of further exploration and integration into current theories of self-injury is the importance of the social environment. This is under-researched in comparison to the historical and individual characteristic elements of self-injury. The Theory of Planned Behaviour has been used to examine the factors involved in parasuicidal behaviour and may offer a framework within which to explore self-injurious behaviour.

Specific research into forensic environments has also indicated that the physical environment and its design can have an impact upon psychological factors that may be linked to self-injury. In addition to the physical environment, the social environment, the attitudes of staff who work within forensic settings, also appears to have a valuable role. Attitudes as part of the social environmental context may represent variables which are sensitive to intent to self-injure and therefore able to highlight imminent risk.

The next chapter will highlight further risk factors for self-injury, protective factors for self-injury and finally review the current approaches towards the assessment of self-injurious behaviour. This is important in order to understand which elements from the literature base are included when considering a comprehensive assessment of an individual's risk of self-injurious behaviour that is based in theory and the empirical literature.

Chapter 4

RISK AND PROTECTIVE FACTORS FOR SELF INJURY

Structure of the chapter

The chapter begins with an overview of the literature relating to risk factors for self-injurious behaviour. It then explores protective factors. It examines theory that could support the empirical investigation of protective factors for self-injury. The chapter concludes by highlighting the relevance of the research in relation to the current study.

Risk factors for self-injury

Chapter 2 explains that a diagnosis of any psychiatric condition is a risk factor for self-injury. Therefore, to avoid duplication, this particular risk for self-injury will not be reviewed again. Within the context of the current research, it is important to note that diagnosis of a psychiatric condition was linked to self-injury within both secure hospitals and prisons (Bird & Faulkner, 2000). In reviewing the literature about self-injury any results that related solely to suicidal behaviour were not included as they were not the focus of interest. The overall aim of this research is to improve understanding of self-injury as an early intervention point to protect against subsequent suicidal behaviour. The remainder of this section summarises the research relating to risk factors specific to self-injurious behaviour.

Previous self-injurious behaviours and ideation

One static factor important as a risk factor for self-injury is previous self-injurious behaviour (Kreitman & Foster, 1991). This has been found with juvenile prisoners (Morgan & Hawton, 2004), those diagnosed with schizophrenia (Haw, Hawton, Sutton, Sinclair & Deeks, 2005) and women seeking treatment (Bedi, Muller & Classen, 2014). The latter study also looked at cumulative risk, namely the adding of risk factors to discriminate, between women with history of self-injury and those with no history of self-injury. It found that risk factors which discriminated between the two groups were history of previous self-injury, significantly higher levels of emotional dysregulation, dissociation, and alexithymia. The authors summarised that, because of the cumulative effect demonstrated in the study in relation to risk, targeting even one risk factor may

contribute to an overall decrease in self-injury. This highlights the importance of the identification of risk factors for self-injury.

In a study by Palmer & Connelly (2005) prisoners who had previously engaged in self-injury also demonstrated significantly higher scores on the Beck Scale for Suicide Ideation, indicating a link between the two. Pluck, Lee & Parks (2013) carried out research into the prevalence of self-injury within a homeless population. The study found that those with a history of self-injurious behaviour were significantly more likely to engage in thoughts of self-injury or suicide. However this study did not aim to determine whether thinking about self-injury was a risk factor, rather that they were significantly linked when compared to a group of homeless people who were not engaging in self-injurious behaviour. Giletta et al. (2015) carried out research in a sample of adolescents and found that self-injurious behaviour and suicidal ideation were highly co-morbid. Giletta et al. found that in a sample of 565 adolescents, although some displayed moderate suicidal ideation and low self-injury, hardly any adolescents demonstrated history of moderate self-injury and low suicidal ideation. It was suggested that this indicates the importance of the link between self-injury and suicidal ideation. The above studies demonstrate not only the importance of considering previous self-injury but also whether the individual engages in thoughts about self-injurious behaviour as a potential dynamic indicator of risk.

Childhood abuse

In a study about risk factors for college students Gratz, Dukes & Roemer (2002) summarised a number of research papers indicating that childhood sexual abuse is a strong predictor of subsequent self-injury. They did highlight that some studies had not supported such a link, but that these studies were generally methodologically weak, for example using inappropriate statistics. In their sample of 133 participants the researchers found that childhood abuse was significantly associated with self-injurious behaviour. In a sample of college students, Arens, Gaher & Simons (2012) concluded that those who had been abused as children were significantly more likely to engage in self-injurious behaviour as adults. A study of adolescents by Glassman, Weierich, Hooley, Deliberto & Nock (2007) found that childhood emotional abuse had a strong relationship with self-injury, but that physical abuse and emotional neglect did not. Glassman et al. highlighted the point that ‘childhood abuse’ is a term used to cover a wide range of

potential behaviours and that some of the behaviours within this umbrella term may or may not be specific risk factors for self-injury. In research related to the current study, Wachter, Murphy, Kennerley & Wachter (2009) found that, in a sample of 58 psychiatric patients, childhood maltreatment predicted self-injurious behaviour. However the term used within this study was *childhood maltreatment*, therefore the point made by Glassman et al. regarding terminology may be relevant. There does appear to be a link between childhood abuse and self-injurious behaviour across lifespan and within different populations. A more specific definition of what *type* of childhood abuse is likely to link with self-injury would be worthy of investigation.

Substance abuse

Another area of risk identified in the literature is that between substance use and self-injury. Haw, Houston, Townsend & Hawton (2001) compared self-injury patients who presented at accident and emergency departments with and without an ICD-10 diagnosis of an alcohol disorder. The study found that those with an alcohol disorder were more likely to have a previous history of self-injury and also a higher lifetime repetition rate of self-injury than the group with no alcohol history. Riedi et al. (2012) carried out research in a French accident and emergency department. Of 184 female self-injury patients admitted to the hospital and followed up 6 months later, those with an alcohol disorder were more likely to have repeated an act of self-injury than those with no alcohol disorder on initial admission. There is a similarity with substance abuse. Goldstein, Flett, Wekerle & Wall (2009) found that in a sample of self-injurious college students, illicit drug use was a significant positive correlate of self-injury compared to a group who did not self-injure. Moller, Tait & Byrne (2013) aimed to examine the predictors of self-injury in a sample of 4,126 members of the general Australian population. They found that past year self-injury was predicted by cannabis use and drinking alcohol at a level likely to cause dependence. Both were independently predictive of self-injury. This research indicates an association between substance use and self-injurious behaviour, but the direction of the association remains unclear. A study by Coffey et al. (2015) aimed to determine whether adolescents who engaged in self injurious behaviour were more likely to develop substance use difficulties in adulthood. The methodology was a 15 year prospective cohort of 1,943 adolescents recruited from secondary schools. The results indicated that substance use and self-injury were strongly associated during adolescence, and that self-injury predicted a

fourfold increase in the likelihood of multiple dependence syndromes. When assessed as adults, those participants who had self-injured as adolescents reported increased prevalence of substance use compared to those participants who had never self-injured. A study by Gratz & Tull (2010) using 61 inpatients undergoing substance treatment suggested that the association between substance use and self-injurious behaviour may be due to heightened emotional dysregulation. The study found that those with a substance dependency and a history of self-injurious behaviour had higher levels of emotional dysregulation than those with a substance dependency but no history of self-injury. This indicates that within inpatient settings self-injury and substance use appear to be linked, and that this may be due to both behaviours being used as coping strategies to regulate emotions.

Serious illness or accidents

Rosenthal et al. (1972) observed that a potential risk factor for self-injury was that most of their self-injuring patients had suffered serious illnesses, accident or surgeries before the age of 12. This was in comparison to a matched control group who did not self-injure and had not experienced such events. However this is an older piece of research and the authors also attributed self-injurious behaviour to 'genital conflict' which may be considered an outdated explanation of self-injurious behaviour. Nevertheless, whilst previous illness or surgery is not a risk factor that has been heavily researched, it does have conceptual links to the habituation process observed within the Interpersonal Psychological Theory of Suicidal Behaviour discussed in Chapter 3. There may be a possibility that previous surgery/illness habituates individuals to the fear associated with self-injury also, not just subsequent suicide attempts. Research by Singhal et al. (2014) investigated associations between psychiatric and physical illness and self-injurious behaviour. It was demonstrated that there was a strong link with all psychiatric illnesses studies, but also physical illnesses such as epilepsy, asthma, migraine, psoriasis, eczema, diabetes and inflammatory polyarthropathies. An earlier study by Webb et al. (2012) had also found that the risk of self-injury was increased with each physical illness an individual suffered from. Marusic & Goodwin (2006) offer an explanation that physical illness, once severe, can be considered a negative and possibly traumatic life event. The role of physical illness may be especially relevant when considering research that indicates that physical illness in psychiatric patients is increased (Sprah, Dernovsek, Wahlbeck & Haaramo, 2017). The current research focuses upon psychiatric patients

and therefore the finding that physical illness is increased within this population and is linked to self-injury is important to consider.

Social factors

Magne-Ingvar, Ojehagen & Traskman-Bendz (1992) conducted research into the relationships of those engaging in self injury. They found that few people who were engaging in self-injury had a positively functioning relationship with someone therefore they were more likely to be socially isolated. Social isolation may be linked to the Interpersonal Psychological Theory of Suicidal Behaviour concept of failed belongingness which is reviewed in Chapter 3. This indicates that absence of relationships can contribute to self-injury but, paradoxically, relationships which have an emphasis on self-injurious behaviour also appear to contribute to the risk of self-injury. Literature discussed in Chapter 2 focused upon the impact of 'contagion' - the clustering of self-injury between individuals especially within an adolescent population. It is possible to imagine that adolescents who have self-injury in common may feel as though they belong to a valued group counteracting the failed belongingness cognitions highlighted within the Interpersonal Psychological Theory of Suicidal Behaviour. In a study by Heath, Ross, Toste, Charlebois & Nedecheva (2009) of participants aged between 18 and 24 self-injury was found to be socially motivated in a number of ways; 65% of the participants said that they talked to their friends about the behaviours, 58% said that their friends had engaged in the behaviour first and 17% of participants had injured themselves in front of a friend. However the results may not indicate 'motivation' in the sense that the behaviour was motivated by social factors. For example, the motivation may have been to regulate emotions, but because other young people were regulating their emotions this way, these social factors had an impact upon the choice. The authors concluded that their study suggested the importance of social factors as impacting risk for self-injury. The conclusion of the research appears more technically accurate that social factors may have an impact, rather than the results indicating motivation.

Negative cognitions

Negative cognitions researched in relation to self-injury include: self-criticism, self-persecution, intrusive thoughts and hopelessness. Glassman et al. (2007) identified that, in adolescents who had been emotionally abused as children, negative self-criticism

acted as a mediator for subsequent self-injurious behaviour. In a study which included inpatients and day patients the role of self-criticism in self-injurious behaviour was the focus (Gilbert et al.,2010). The study found that, in a sample of 73 patients, self-injurious behaviour was significantly related to self-criticism, in particular self-persecution. Some of the self-critical and self-persecutory thoughts endorsed more highly by those who had self-injured included, 'I get critical and angry with myself' and 'if I punish myself I feel better'.

Another type of cognition which may link to self-injurious behaviour is intrusive thoughts. They have been found to be important in accounting for self-injury in a general population study (Batey, May & Andrade, 2010). Batey et al. found that intrusive thoughts were significantly more frequent, more distracting and more distressing for those individuals engaging in self-injury than those individuals who did not. Those who engaged in self-injury also reported a greater frequency of negative thoughts about themselves and unhappy memories.

Palmer and Connelly (2005) studied the negative cognition of hopelessness. In a sample of prisoners who had previously engaged in self-injurious behaviours, it was found that scores of hopelessness on the Beck Hopelessness Scale were significantly higher than those with no previous history. It should be noted however that this was a comparatively small study with only 48 participants. In a much larger study, using a prospective cohort of 19,479 individuals presenting to Accident and Emergency departments, Steeg et al. (2016) found that hopelessness was associated with increased risk for self-injury. The study also concluded that hopelessness exacerbated other known risk factors for self-injurious behaviour such as use of alcohol and forensic problems. Steeg et al. summarised that the importance of understanding the risk factor of hopelessness was that it was both dynamic and modifiable. Another risk factor which has the potential to be modifiable is that of impulsivity.

Impulsivity

Glenn & Klonsky (2010) carried out an analysis of impulsivity in self-injurious behaviour. Participants were 82 individuals who engaged in self-injury and 86 controls, all from a college population. It was explained that previous research into the role of impulsivity had been mixed, possibly because of failure to consider that it had a number

of different components. The measure used within this study was the UPPS Impulsive Behaviour Scale which is multidimensional in its measurement of impulsivity. The results indicated that those participants who engaged in self-injury were significantly more likely to have problems with the 'urgency' scale on the UPPS. This suggests likelihood to engage in 'rash' behaviours when negative affect is present. Glenn & Klonsky concluded that this research could direct clinicians to consider strategies to support individuals who engage in self-injury in line with the 'urgency' element of the UPPS. Lynam, Miller, Miller, Bornovalova & Lejuez (2011) carried out a further study of the UPPS model in relation to self-injury. This also indicated that urgency accounted for 30% of variance in accounting for self-injury. Lynam et al. also found that 'lack of premeditation' (tendency to act without considering consequences) was important in predicting self-injurious behaviour, especially when interacting with urgency. Individuals high in urgency and lack of premeditation were at particular risk for both suicidal and self-injurious behaviour. Arens, Gaher & Simons (2012) also studied a population of college students, again using the UPPS Impulsive Behaviour Scale. This study replicated the previous findings that the urgency scale was most strongly related to self-injury. In relation to the current population of interest, Williams et al. (2015) found that when comparing a group of borderline personality disorder patients between 'high' and 'low' self-reported lethality those in the high lethality group were more likely to report impulsivity. The findings above indicate that the urgency element of the UPPS may indicate a further risk factor for which intervention may be possible.

Difficulties with emotion

The final risk factor considered relates to emotional dysregulation or difficulties with emotion. It should be noted that Chapter 3 has already considered some of the affect regulation functions of self-injurious behaviour when reviewing theoretical approaches, relevant to this section. Gratz & Chapman (2007) considered potential risk factors for self-injury in male undergraduate students. In a sample of 92 men 44% reported a history of self-injury. Amongst those who reported a history of self-injury the risk factor of emotional dysregulation accounted for the greatest unique variance in self-injury frequency. It is important to note that Gratz & Chapman highlighted the importance of this finding based on observed gender bias towards research relating to women, emotion dysregulation and self-injury. In a study by Bedi et al. (2014) a significantly higher level of emotional dysregulation was one of six risk factors that distinguished between a group

of self-injuring and non-self-injuring women. More recently Davies et al. (2014) found that those individuals with a history of self-injury had significantly less ability to regulate emotions during a sad film clip. Interestingly this study also distinguished between emotion dysregulation and negative emotional reactivity. There was no difference between the self-injury and control group in terms of negative emotional reactivity. In terms of the type of negative emotions which may be linked to self-injury, Brown, Williams & Collins (2007) carried out research using a sample of 223 college students. The participants were split into three groups of recent, past and no history of self-injury. The results indicated that those with a recent and past history of self-injury were more likely to experience negative emotions such as hostility, guilt and sadness. However it is possible that if the participants knew the study focused upon the link between self-injury and emotions, that they would have experienced negative emotions in response to the research area.

Summary of the risk factor literature

A final study to mention in relation to risk factors is recent research by Larkin, Di Blasi & Arensmen (2014). This aimed to identify risk factors for prospective repetition of self-injury. The study is summarised separately in this section because it included a review of 129 studies which represented a large sample of 329, 001 participants. Factors which were identified as having a consistent link to repeated self-injury were: previous self-injury, personality disorder diagnosis, hopelessness, history of psychiatric treatment, schizophrenia diagnosis, alcohol abuse, drug abuse and living alone. The authors highlighted that psychological risk factors (and protective factors) remain relatively under researched. This latter point is essential to consider in light of the current research which aims to explore potential protective factors for self-injurious behaviour within a population likely to experience a number of the risk factors highlighted within the Larkin et al. study.

The importance of the number of risk factors experienced is illustrated by research conducted by Bedi, Muller & Classen (2014) and which used a cumulative risk approach. The study focused upon risk factors associated with self-injury in a group of women with histories of childhood abuse who were seeking treatment. The authors explained that those individuals with more risk factors are likely to experience less favourable outcomes than others with fewer risk factors. Women experiencing five or more risk

factors were 37 times more likely to belong to the group who self-injured. Some of the benefits of this approach within a very high risk population, such as a forensic setting, are that it may allow some specificity of prediction, especially with the inclusion of more recently researched psychological characteristics incorporating theoretical explanations of self-injury as suggested necessary by Larkin et al. (2014). As such, the chapter will now progress to examine protective factors which may mediate some of the cumulative risk which may be evident within the population of the current research.

Protective factors for self-injury

The literature available to review for risk factors for self-injury is relatively sparse, and this is even more so for protective factors. The salutogenic[7] approach (Antonovsky, 1979), suggests that when a person faces stress, protective factors can diminish the risk of disease. Therefore the consideration of protective factors adopts a positive psychological perspective. Positive psychology is the study of strengths and resilience that enable people to thrive and flourish rather than the focus upon pathology (Hefferon & Boniwell, 2011). For example, Hjemdal, Fribourg, Stiles, Rosenvinge & Martinussen (2006) found that, when using the Resilience Scale for Adults (RSA), important protective factors could buffer the development of psychiatric symptoms. People stop engaging in self-injurious behaviour so this poses an engaging research question as to why this occurs. The Integrated Model of Self Injurious Activity (Ireland & York, 2012) included protective factors for this reason but acknowledged that specific factors were unknown as they were under-researched. Ireland & York also recognised that the introduction of the concept of protective factors was vague and not tested in any way. The first part of this section reviews literature for any protective factors for self-injury. As with risk factor research, this section will review protective factors relating to self-injury rather than suicide.

An important point about terminology is that both '*protective factors'* and '*resilience factors'* are used within the literature. Kocalevent et al. (2015) contend that resilience factors are any empirically derived variables which statistically predict a resilient outcome. They explain that two elements are linked: the exposure to some form of adversity and a positive outcome higher than the expected range. O'Connell, Boat &

[7]Salutogenesis describes an approach focusing on factors that support human health rather than on factors that cause disease (Antonovsky, 1979).

Warner (2009, p. xxvii) define a protective factor as 'a characteristic at the biological, psychological, family or community level that is associated with a lower likelihood of problem outcomes that reduce the negative impact of a risk factor on problem outcomes'. Both concepts are associated with either a lower negative outcome or a higher positive outcome. The two terms are also used interchangeably at times within the literature and the term '*resilience protective factors'* has also been used (Dray et al.,2017). Earlier points made in Chapter 2 regarding the importance of definition are again relevant here but are beyond the scope of the current Chapter in relation to these two terms. For the remainder of this chapter both terms are used depending upon the use of specific terms within the literature cited.

A protective factor considered more than once is family support. In a study into self-injury and suicide and sexuality 3,131 adolescents took part (Reisner, Biello, Perry, Garamel & Mimiaga, 2014). It examined self-injury and suicide attempt outcomes in relation to what Reisner et al. quoted as 'well known' sources of resilience. 'Family support' was found to be significantly protective for both self-injury and suicide attempting. Other sources of resilience explored were school support and community engagement but these were not significantly associated with either self-injury or suicide. Reisner et al. outlined the importance of future testing of cumulative effects of protective factors as individuals may benefit from many sources of resilience when considering self-injury. This relates to an earlier point made by research into risk factors.

Janzer et al. (2015) examined the impact of family support upon victims of bullying who were engaging in self-injury. All measures administered within this study were self-report so reporting bias may have occurred regarding experiences of bullying, self-injury and parenting practices which were the key areas being researched. In a sample of 647 adolescents who were being bullied and engaged in self-injuring, parental support appeared to have a significant protective effect. Those who had parental support engaged in significantly less self-injurious behaviour. However this was only in adolescents who reported 'occasional' bullying. The protective effect of parental support was not observed in those who reported repetitive bullying. This latter finding may relate to the observation of Reisner et al. (2014) about the importance of considering a cumulative effect of protective factors: those who are victims of frequent bullying may not experience enough protection from a single factor.

Another protective factor that appears repeatedly in the literature is coping style. Williams & Hasking (2010) completed research which aimed to address whether coping skills, emotion regulation and alcohol moderated the relationship between psychological distress and self-injury. There were 289 young adults participating within this study. The results indicated that self-injury was negatively related to problem-focused and emotion-focused coping styles thus indicating potential protective factors. The finding that emotion focused coping was negatively related to self-injury was suggested as out of line with predictions. Williams & Hasking explained that, given the literature suggesting self-injury is a coping strategy for managing affect; it may have been expected to be positively related. Interestingly the results also indicated that psychological distress was not related to self-injury for those who used emotion focused coping strategies. Although emotion focused coping may be seen as a less favourable coping strategy, it is possible that in the right context it could be helpful. An extreme example is that when bereavement occurs, emotion focused coping may actually be the most adaptive form of coping.

Furthermore, emotion focused coping may moderate some of the effects of psychological distress. Ireland & York (2012) also found that emotion focused coping was negatively related to suicidal ideation in female prisoners. In a further study using women prisoners Chapman, Gratz & Turner (2013) focused upon potential protective factors. The research indicated that 'active coping' was negatively related to both the presence and frequency of self-injury. The research highlights not only the potential importance of coping style but also the importance of social environmental factors in terms of context regarding the use of a certain coping strategy.

Another potential protective factor was highlighted by Mikolajczak, Petrides & Hurry (2009) who looked at the role of trait emotional intelligence. They hypothesised that higher trait emotional intelligence would be associated with a lower likelihood of self-injury within an adolescent population. The results indicated that the predictions were correct only for those adolescents who hurt themselves with no intention to die. It was also observed that those adolescents who self-injured were more likely to use an emotional coping strategy which the authors termed as maladaptive. However, given some of the research highlighted above, it is possible that there is a more complex

relationship and potentially context specific use of an emotion focused coping strategy in individuals who engage in self-injury. Emotion focused coping, like other coping strategies, may only be maladaptive if over used or used in the wrong context or for the wrong stressor.

When considering protective factors within the literature, Wichstrom (2009) made the point that research to date had always combined information regarding self-injury and suicide attempts as being the same. Therefore the work carried out by Wichstrom was exploratory in terms of differences in potential protective factors for self-injury and suicide. The study indicated that satisfaction with social support protected against self-injury but not suicide attempts. This was the only unique predictor related to self-injury that was identified within the study. This finding may be important if considered in line with the Interpersonal Psychological Theory of Suicidal Behaviour, in that social support may mediate any failed belongingness. Further protective factors, or a cumulative effect, may be required to protect against suicidal behaviours as opposed to self-injurious behaviours.

Voon, Hasking & Martin (2014) examined a further protective factor, that of the impact of cognitive reappraisal on the self-injury rates. The sample was 3,143 high school students. The research found that, after controlling for adverse life events, psychological distress and other emotion regulation strategies, cognitive reappraisal was associated with less serious self-injury and slower growth in severity of self-injury over time. This indicates the potential for cognitive reappraisal as a focus for future protective factor research. Interestingly Batey, May & Andrade, 2010) suggested that types of cognition involved in self-injury was an area increasingly in need of study. The previous section indicated the role of negative cognition as a risk factor for self-injury, therefore it is encouraging that a protective factor such as cognitive reappraisal may show promise in intervening with that specific dynamic risk factor. According to Rutter (1985) a protective factor should interact with risk factors to reduce the possibility of an adverse outcome. A theory which incorporates the potential for considering resilience and protective factors is *Self Determination Theory* (SDT; Deci & Ryan, 1985).

Self Determination Theory (Deci & Ryan, 1985)

Self Determination Theory (SDT; Deci & Ryan, 1985) accounts for individual and socio-environmental influences on behaviour and has been applied to health behaviours. The theory assumes individuals are innately orientated towards growth and well-being and thus possess intrinsic energy for life. This has parallels with the field of Positive Psychology which is the study of strengths that enable individuals and communities to thrive (Seligman, 2004). Deci & Ryan (2008) suggest that the most central distinction within Self Determination Theory is between *autonomous motivation* and *controlled motivation*. When individuals are autonomously motivated they experience volition, or a self-endorsement of their actions. Controlled motivation, by contrast, is where one's behaviour is a function of external contingencies of reward or punishment. The theory suggests that, when controlled, individuals experience pressure to think, feel or behave in particular ways. Deci & Ryan (2008) argue that autonomous motivation will yield greater psychological health benefits.

Basic Psychological Needs Theory (BPNT: Deci & Ryan, 2000), is a sub theory within Self Determination Theory (SDT). It proposes that individuals function and develop most effectively as a consequence of social environmental support for their *autonomy*, *competence* and *relatedness* needs (Bartholomew, Ntoumanis, Ryan, Bosch & Thogersen-Ntoumanis 2011). The need for *autonomy* refers to the degree to which individuals feel volitional and responsible for their own behaviour. The need for *competence* concerns the degree to which individuals feel effective in their ongoing interactions with the social environment. Finally, *relatedness* is defined as the extent to which individuals feel a secure sense of belongingness and connectedness to others in their social environment (Ryan & Deci, 2002). Deci & Ryan (2000) suggest that the thwarting of such psychological needs in certain social environments can lead to defensive or self-protective behaviours that have significant negative consequences for health and well-being. If the existing literature concerning protective factors is reconsidered, it is possible that 'coping' could be an element of competence and 'family support' may overlap with relatedness. Indeed, Britton, Patrick, Wenzel & Williams (2011) recommend that SDT could be used to engage and work with clients struggling with psychiatric disorders that are associated with suicide related behaviour (i.e. self-injury) but have not yet developed suicidal ideation or made suicide attempts.

The current research relates to self-injury within forensic settings. Therapeutic settings have been identified as a social context that *can* be harnessed to maximise an individual's experience of autonomy and should be termed *autonomy supportive* (Ryan & Deci, 2008). However a social context may also have a negative effect on meeting autonomy needs. Within a forensic setting decisions such as custodial sentences and detention under the Mental Health Act are beyond the control of the individual. Decisions about treatment and discharge tend to be influenced and made by third parties which may impact upon the *autonomy* experienced (Jacob, Dorkins & Smith, 2007). With regards to *competence* and the experience of feeling effective within the social environment, arguably a forensic setting could restrict this and not all social interactions may be positive (McGauley & Humphrey, 2003). Finally, *relatedness* within a forensic context may be difficult to achieve, especially when considering that forensic patients have typically had negative relationships with parents and authority figures (McCann & Ball, 2000) and that the nature of forensic settings can promote an authoritarian style of therapeutic interaction (Gralton, Udu &Ranasinghe, 2006). La Guardia & Patrick (2008) highlighted that significant others can be an important source of autonomous motivation and can be instrumental in developing and maintaining this motivation in a given context. It is possible that staff may be the significant others for patients within such settings. This has implications for the potential of staff and patient interactions to promote positive patient outcomes.

As highlighted by Ireland & York (2012) in the development of the Integrated Model of Self Injurious Activity, it is not yet known as to what specific protective factors may contribute to protecting against self-injurious behaviours. However, Self Determination Theory (Deci & Ryan, 1985) and subsequently Basic Psychological Needs Theory (Deci & Ryan, 2000) provide theoretical understanding about the motivation factors involved in relation to the social environment. Self Determination Theory is rooted in positive psychology and it asserts that well-being occurs when the basic psychological needs are met. Therefore, if any of the components of autonomy, competence or relatedness are achieved for an individual, potentially this may protect against illness, or specifically in this research, self-injurious behaviour. Research has indicated using Self Determination in a practical manner with individuals who are suicidal. Britton, Williams & Conner (2007) outlined some of the benefits of using SDT to increase engagement in treatment and improve treatment outcome, for example.

More recent research has also considered the combination of needs based research and theory and risk theory in relation to suicidal behaviour. Tucker & Wingate (2014) focused upon the relationship between basic psychological needs as outlined by self-determination theory (Deci & Ryan, 2000) and the interpersonal predictors of suicidal desire, as outlined by the Interpersonal Psychological Theory of Suicidal Behaviour (Joiner, 2005). Indeed Tucker & Wingate (2014) argue that the cognitions of perceived burdensomeness and thwarted belongingness relate to a lack of autonomy, relatedness and competence. The authors hypothesised that the satisfaction of each individual need of autonomy, competence and relatedness would be negatively related to suicidal ideation, thwarted belongingness and perceived burdensomeness. Similarly they hypothesised that a combination of autonomy, competence and relatedness would be negatively related to the same three constructs. Participants were 336 students from a US University. The results indicated a significant relationship between basic need satisfaction and suicidal ideation occurred through both perceived burdensomeness and thwarted belongingness individually. The authors proposed that their results supported Deci & Ryan's (2000) hypothesis that unmet basic psychological needs are an antecedent to negative outcomes. It is further summarised that the findings provide continued support for the study of positive psychological constructs as potential protective factors against interpersonal suicide risk and suicidal ideation. It was suggested that future research should examine the relationships between resilience to suicidal thoughts and behaviour and the activities, cognitions and interpersonal interactions that are associated with basic need satisfaction.

As has been outlined in earlier chapters, there is more research based upon exploration of suicidal behaviour. This has also been the case with application of Self Determination Theory to suicidal behaviour as opposed to self-injurious behaviour. However, given that the current research is exploring the Integrated Model of Self Injurious Activity (Ireland & York, 2012) which was initially based upon the Interpersonal Psychological Theory of Suicidal Behaviour (Joiner, 2005) the application of Self Determination Theory based on the above research appears relevant. It is unclear as to what factors are likely to be recognised as protective, other than the relatively scarce literature identified here, therefore the application of a motivation theory such as Self Determination Theory may add value. As outlined by Reeves, Albert, Kuper & Hodges (2008), the use of

theories within qualitative research gives researchers different lenses through which to look at complicated social issues. It is considered that self-injurious behaviour is one such complex social issue and due to the limitations of available research in understanding protective factors for self-injury, the application of Self Determination Theory to explore these factors further within the current research is likely to be helpful.

Concluding comments

This chapter has outlined research relating to risk and protective factors. It has focused on research that solely considers self-injury rather than including suicidal behaviour. The reason for this is to enhance understanding of self-injury, given the strong link it has to subsequent suicide attempts. The literature reviewed indicates that there is some, limited, research relating to risk factors for self-injurious behaviour including factors such as previous self-injurious behaviours and ideation, childhood abuse, substance abuse, serious illness or accidents, social factors, negative cognitions, impulsivity and difficulties with emotion. The literature available relating to protective factors is even more sparse but outlines that the following factors are important; family support, coping style, emotional intelligence, satisfaction with social support and cognitive reappraisal.

An important concept highlighted within the risk and protective factors literature is that of a cumulative effect. Some evidence appears to suggest that the more risk factors an individual has, the more likely they are to engage in self-injurious behaviour. This is particularly relevant to the current research, given the high rate of established risk factors within the psychiatric forensic population. However literature about protective factors has tentatively begun to suggest that protective factors may buffer risk for self-injury. One current difficulty is the lack of knowledge about what may constitute an effective protective factor. Encouragingly, a number of established risk factors highlighted within the literature are dynamic in nature. This means that research could contribute by establishing which protective factors contribute to an individual's resilience in choosing alternative behaviours to self-injury. As suggested by Larkin et al. (2014) there is need to establish further understanding of both psychological risk factors and protective factors. However the full scope of potential protective factors for self-injury remains unexplored. Self Determination Theory which has been applied to health related behaviours, is highlighted in order to provide theoretical foundation for the current research into potential protective factors for self-injurious behaviour. The next chapter

will summarise the gaps identified within this literature review, in order to outline the aims of the current thesis.

Chapter 5

ADDRESSING THE RESEARCH PROBLEM

Structure of the chapter

The chapter describes how gaps identified within the literature review in relation to understanding self-injurious behaviour within forensic settings will be used to form the aims and predictions of this thesis.

Rationale for the current research

As noted in earlier chapters, the behaviour of self-injury has gained increasing attention in recent years because of its presence as a robust risk factor for suicidal behaviour and the prevalence of suicide as a cause of death worldwide (WHO, 2013). Some of the difficulties in advancing this particular area have centred on definitional ambiguity and a lack of consensus regarding what the behaviour comprises. This has resulted in research that focuses on describing the behaviour as opposed to advancing theory and understanding. Self-injurious behaviour is exhibited by a wide range of individuals, but those with mental health problems and those detained within secure settings are at increased risk of self-injury. As indicated in the *Interpersonal Psychological Theory* of Suicidal Behaviour (IPTSB; Joiner 2005) the importance of cognitive dynamic factors should also be considered: specifically the concepts of perceived burdensomeness and failed belongingness. In addition to this, the theory also incorporates an explanation of how self-injurious behaviour can help habituate an individual to the pain and fear involved in subsequently suicidal behaviours. This theory has been applied to the study of self-damaging behaviour in women prisoners. From this research a new model of understanding self-injury has been developed: The Integrated Model of Self Injurious Activity (Ireland & York, 2012). This includes a cognition element and also consideration of the availability of methods for self-injurious behaviour. It also includes protective factors for self-injury, although it acknowledges that the specifics of what to include here were under-researched. Arguably, future research should focus on examining aspects of this model not only with a prisoner sample but across a broader range of populations, including self-injurious behaviour and cognition amongst men. The current thesis also aims to explore these elements of the Integrated Model of Self Injurious behaviour within a forensic psychiatric population.

The social environment also appears to be an emerging area of importance when considering self-injurious behaviour. Research acknowledges that the role of the proximal environment becomes much less flexible when individuals are detained within forensic settings and this can have a subsequent impact upon psychological distress (Goomany & Dickinson, 2015). Both the physical and social environment within forensic settings can play a role in subsequent self-injury (Mazano, Ciclitira & Adler, 2012). Eccles & Wigfield (2002) expanded the concept of environmental factors outlining that, when dealing with environmental influences, an individual's beliefs, norms, goals and motives will mediate various mental processes. One theory which has been applied to various health related behaviours and which may assist in understanding the points highlighted by Eccles et al. (2002) is The Theory of Planned Behaviour (Ajzen, 1991). This focuses on the importance of attitudes, an element of the social environment that is beginning to receive more attention. For example Morgan & Priest (1991) suggested that the attitudes of others might be as important as the psychopathology of the person harming themselves. Research has indicated that the attitudes of staff working with individuals detained within forensic settings are not always positive and therefore may increase risk in relation to self-injury. Attitudes of the individuals engaging in self-injury have not been widely examined and have not been studied at all in the context of a forensic setting. Research into the importance of considering social cognitive variables, such as attitudes, in relation to self-injurious behaviour has shown to be a promising direction (e.g. O'Connor et al.,2006), with positive attitudes towards self-injury remaining a unique predictor of intent to self-injure (Lewis et al.,2011). The current thesis aims to explore the attitudes of both individuals engaging in self-injury and also the attitudes of the staff caring for them.

As indicated by Green & Jakupcak (2015) men who self-injure do so more severely than women. They are also less likely to seek treatment for any injuries and more likely to report joint suicidality with self-injury. Green & Jakupcak found that some of the ways in which men may self-injure as opposed to women, such as punching walls or breaking bones, may be dismissed as not self-injurious or as being normative for men. They also highlighted that men were more likely to cite positive reinforcers for self-injury when examining motivations such as feeling a 'high' or receiving approval or respect from friends. The need for further research to understand the specific motivations and

reinforcers related to self-injury in men is noted (Green & Jakuocak, 2015). They also suggest that qualitative research asking men about the ways in which they hurt themselves and some of the reasons for this would increase understanding in this area. Also relevant is work by Karasouli, Owens, Latchford & Kelley (2015) who compared individuals with a history of self-injury who died by suicide to those who had a self-injury episode but did not later die by suicide. The important part of the results in relation to the aim of the current thesis was the finding that men were more likely to die by suicide following an incident of self-injury. Again, this highlights the importance of establishing greater knowledge and understanding about self-injury in an attempt to contribute to the prevention of suicidal behaviour in the longer term.

The review also demonstrated that research addressing risk factors for self-injury specifically, as opposed to a combination of self-injury and suicide risk factors, is limited. It outlines evidence for some established risk factors for self-injury (e.g. previous self-injury, Kreitman & Foster, 1991), childhood abuse (Gratz et al.,2002) and substance abuse history (Haw et al. 2001) but these tend to be 'static' in nature in that they are historical and unchangeable. Factors such as previous psychiatric care, substance abuse, childhood abuse, previous self-injury are supported by the literature. However, within a forensic setting, these particular factors do not offer much additional information about an individual's risk of further self-harm because of their commonality and static nature. Therefore the focus on exploring dynamic factors that are psychological, cognitive or social in nature and have the potential to respond to treatment intervention is likely to be particularly helpful.

The review presented in this thesis shows a clear lack of research into protective factors against self-injury. Family support and coping strategies were two of the most likely important protective factors, but other than this the literature is sparse. As such, Self Determination Theory (SDT; Deci & Ryan, 1985) was proposed as a theory that could be utilised in the current research to support an understanding of the factors likely to be protective. Some of the difficulty outlined within the literature review regarding theoretical accounts of self-injurious behaviour is the problem of explaining why self-injury does not occur even though risk factors are present. It is possible that this is due to the presence of protective factors and their interaction with risk factors. The current

thesis aims to explore potential protective factors for self-injury to further promote understanding in this area.

In summary, there is clear need for further investigation of the self-injurious behaviour within secure forensic settings. Research based on testing theoretical explanations of self-injury needs to be undertaken to improve the ability to discriminate between those who are at risk of self-injurious behaviour and those who are not. The thesis aims to provide a more comprehensive integrated theory that builds on earlier tested models such as the Integrated Model of Self Injurious Activity (Ireland & York, 2012) and the Interpersonal Psychological Theory of Suicidal Behaviour (Joiner, 2005). Self Determination Theory (Deci & Ryan, 1985) will be used to incorporate and explore protective factors for self-injurious behaviour. The present PhD will address these issues through the research questions and hypotheses below.

Research questions and hypotheses

Study 1

Research question: What questions will experts in self-injury (academics/practitioners) generate to understand someone's attitude regarding engaging in self-injurious behaviour when given basic prompts about the components of the attitude theory: *The Theory of Planned Behaviour* (Ajzen, 1991)?

Study 2

Research question: What are the functions for self-injurious behaviour identified by individuals engaging in or caring for self-injurious behaviour within secure services? This will be identified using a functional assessment (i.e. SORC) and analysed using thematic analysis.

Research question: What are the risk factors for self-injurious behaviour identified by individuals engaging in or caring for self-injurious behaviour within secure services? This will be identified using a functional assessment (i.e. SORC) and analysed using thematic analysis?

Research question: What are the protective factors for self-injurious behaviour identified by individuals engaging in or caring for self-injurious behaviour within secure services? This will be identified using a functional assessment (i.e. SORC) and analysed using thematic analysis?

Hypothesis: Protective factors identified will include the three components identified within Self Determination Theory (Deci & Ryan, 1985), namely competence, relatedness and autonomy.

Hypothesis: There will be significant differences in the perceptions of staff compared to the perceptions of patients regarding function, risk and protective factors for self-injury: patients are more likely to suggest functions such as affect regulation and to receive care from others (Nock, 2008) whilst staff will be more likely to suggest functions such as attention seeking, manipulation and to achieve goods (Short et al.,2009).

Research question: Of any risk, protective and function factors identified, where may these factors conceptually fit within the Integrated Model of Self Injurious Activity (Ireland & York, 2012)?

Study 3

Research question: What are the functions for self-injurious behaviour identified by individuals engaging in or caring for self-injurious behaviour within a high secure psychiatric setting identified using a functional assessment (i.e. SORC) and analysed using thematic analysis?

Research question: What are the risk factors for self-injurious behaviour identified by individuals engaging in or caring for self-injurious behaviour within a high psychiatric setting identified using a functional assessment (i.e. SORC) and analysed using thematic analysis?

Research question: What are the protective factors for self-injurious behaviour identified by individuals engaging in or caring for self-injurious behaviour within a high secure psychiatric setting identified using a functional assessment (i.e. SORC) and analysed using thematic analysis?

Hypothesis: Protective factors identified will include the three components identified within Self Determination Theory (Deci & Ryan, 1985), namely competence, relatedness and autonomy.

Hypothesis: There will be significant differences in the perceptions of staff compared to the perceptions of patients regarding function, risk and protective factors for self-injury: patients are likely to suggest functions such as affect regulation and to receive care from others (Nock, 2008) whilst staff will be more likely to suggest functions such as attention seeking, manipulation and to achieve goods (Short et al.,2009).

Research question: Of any risk, protective and function factors identified, where may these factors conceptually fit within the Integrated Model of Self Injurious Activity (Ireland & York, 2012)?

Study 4

Hypothesis: An increased tendency for past self-injurious behaviour will be predicted by increased positive attitudes towards self-injury (O'Connor et al.,2003).

- When comparing those who have never self-injured to those who have self-injured those who have self-injured will have significantly more positive attitudes.

Hypothesis: An increased tendency for past self-injurious behaviour will be predicted by higher anticipated affect scores (O'Connor et al.,2006)

- When comparing those who have never self-injured to those who have self-injured those who have self-injured will have significantly higher anticipated affect scores.

Hypothesis: An increased tendency for past self-injurious behaviour will be predicted by increased impulsivity (Williams et al.,2015).

- When comparing those who have never self-injured to those who have self-injured those who have self-injured will have significantly increased impulsivity.

Hypothesis: An increased tendency for past self-injurious behaviour will be predicted by increased self-blaming as measured by the COPE scale (Gilbert, 2010).

- When comparing those who have never self-injured to those who have self-injured those who have self-injured will have significantly increased self-blaming.

Hypothesis: An increased tendency for past self-injurious behaviour will be predicted by lower levels of resilience as measured by the RSA (Hjemdal et al.,2006)

- When comparing those who have never self-injured to those who have self-injured those who have self-injured will have significantly lower levels of resilience.

Hypothesis: An increased tendency for past self-injurious behaviour will be predicted by higher levels of suicidal ideation (Prinstein, 2008)

- When comparing those who have never self-injured to those who have self-injured those who have self-injured will have significantly higher levels of suicidal ideation.

Research question: Of any predictors identified, where do these factors conceptually fit within the Integrated Model of Self Injurious Activity (Ireland & York, 2012)?

How the PhD will address these research questions and hypotheses

The studies described are aimed at examining risk, functions, attitude and protective factors for individuals who engage in self-injurious behaviour within forensic settings. They will offer some testing of the Integrated Model of Self-Injurious Activity in terms of its application as a new model to explain and predict self-injurious behaviour within forensic psychiatric populations. These aims will be addressed in four studies. Study one (Chapter 6) utilised a Delphi approach to generate risk and protective factors from a pool of experts, beyond those factors identified within the literature search. Study two (Chapter 7) then focuses on exploring the functions, risk, and protective factors for self-injury in a patient and staff participant pool within a medium secure psychiatric hospital. Study two also began initial testing of the Integrated Model of Self Injurious Activity (Ireland & York, 2012) and the application of Self Determination Theory (Deci & Ryan, 1985) in the identification of protective factors for self-injury. Study three (Chapter 8) extends Study two by using a much larger sample in a high secure forensic population. Study four aims to capture elements of the Integrated Model of Self Injurious Activity in more detail (Ireland & York, 2012) in a high secure male psychiatric hospital using various psychometrics. It also identifies a range of protective factors, a novel element of this research.

Chapter 6

STUDY ONE: Using the Delphi method to explore questions to ask about the attitudes of those who engage in self-injury.

Introduction to study one

Ireland & York (2012) developed the Integrated Model of Self-Injurious Activity (IMSIA) based on research carried out with a sample of women prisoners. The development of this model which focuses specifically on self-injurious behaviour was initially based upon the Interpersonal-Psychological Theory of Suicidal Behaviour (ITPSB: Joiner, 2005). The extensions suggested in the Integrated Model of Self-Injurious Activity were the inclusion of temperament factors, propensity to engage in self-injury, cognitions, protective factors and the social environment. In respect of the latter point, Heilbron et al (2014) had noted that the field of self-injury needed to try and understand the interactive effects of intrapersonal, social and ecological contextual factors and that social environmental factors were of critical importance. The aim of the overall PhD was to try and specify what may be important to understand within each of these additional components of the IMSIA.

It was considered that one element of the social environment included the attitudes of both staff and the individuals engaging in self-injurious behaviour towards self-injury. Research into the attitudes of professionals caring for those who self-injure has indicated generally negative perceptions (McAllister et al.,2002; Ireland & Quinn, 2007). The current PhD research was geared towards exploring and developing understanding of self-injurious behaviour within forensic settings. The importance of professionals and understanding the social environment is paramount due to the consistent detention of individuals in such settings. The interactions between professionals and patients/prisoners become the *immediate situation* and the *proximal environment* (Magnusson & Stattin, 2006).

However, the attitude of professionals towards self-injurious behaviour is one half of that particular social environment. The other half is the attitudes of those who engage in self-injurious behaviour. A much smaller amount of research had been conducted into the attitudes of those engaging in self-injurious activity, and as part of the social

environment it was considered an important potential component of the IMSIA to explore. Overall it was hoped that the PhD research would lead to a model which would have clinical applicability for practitioners to use in a meaningful way with individuals engaging in self-injury. As such, it was considered that in order to understand the attitudes of those engaging in self-injury, these practitioners would need to ask questions which may access such attitudes. Therefore, study one was aimed at developing questions which could be used to ascertain an individual's attitude towards engaging in self-injurious behaviour within forensic settings.

Of the minimal research which has been done within this area, the Theory of Planned Behaviour (TPB: Ajzen, 1991) had been utilised. This theory incorporates personal and social values through consideration of attitudes, subjective norms, behavioural intentions and actions. It states that the most important predictor of whether or not an individual engages in the behaviour is their behavioural intention which is predicted by attitudes, subjective norms and perceived behavioural control. O'Connor & Armitage (2003), Lewis, Rosenrot & Santor (2011) and O'Connor, Armitage & Grey (2006) had applied the TBP to understanding the attitudes of those engaging in self-injurious behaviour[8]. However, no studies were found which had looked at the attitudes of individuals within secure settings engaging in self-injury.

Supporting the choice of this direction is the more recent Integrated Motivational-Volitional Model of Suicidal Behaviour (IMV: O'Connor, 2011). This integrated model also incorporated elements of Joiner's Interpersonal Psychological Theory of Suicidal Behaviour and the Theory of Planned Behaviour. The IMV has mainly focused upon suicidal behaviours but has also included attitudinal components such as intention, attitudes, implementation intentions and social behaviours of others for example. This model has had some success by using more sensitive variables than the traditional historical risk factors (O'Connor, Rasmussen & Hawton, 2012).

In order to determine what questions could be used to ask individuals engaging in self-injurious behaviour about their attitudes towards the behaviour, it was decided that a group of experts should be consulted. It was considered that experts could either be

[8] O'Connor & Armitage (2003) focused upon 'parasuicidal' behaviour which included self-injury but also suicidal behaviors.

practitioner or academic in nature (or both). It was noted from the outset that a potential limitation of this study was the omission of 'expert by experience' in terms of gaining the views of those who self-injure. However, it was also planned that further studies of the PhD would compensate by using forensic patients within hospital settings in order to gain their valuable input.

The research question

Given the above outline the research question for study one was 'what questions will experts in self-injury (academics/practitioners) generate to understand someone's attitude regarding engaging in self-injurious behaviour when given basic prompts about the components of the attitude theory the *Theory of Planned Behaviour* (Ajzen, 1991)?' In order to explore this research question the experts were given initial prompts about general attitude components based on the Theory of Planned Behaviour (Ajzen, 1991). The Delphi method was used to consult with the experts in this study.

Rationale for using a Delphi study

The Delphi method is a structured communication technique that relies on a panel of 'experts' (Linstone & Turoff, 1975). Experts are asked to answer questions in a series of rounds. After each round the researcher provides a summary of the experts' judgements from the previous rounds. Experts are encouraged to revise their earlier answers in light of the replies of other members of the panel. The process ends when consensus is reached or theoretical saturation is achieved (Skulmoski, Hartman & Krahn, 2007). While the aim of a Delphi is consensus, Scheibe, Skutsh & Schofer (2002) recommend conclusion when opinions reach stability.

The literature review cited in Chapters 2 to 4 identified gaps in understanding an individual's attitude towards engaging in self-injurious behaviour. This is important as attitudes form part of the social environment, as outlined in Chapter 4. Therefore it was considered that exploration of individuals' attitudes towards self-injurious behaviour would be important. It was decided that a method whereby experts in self-injury were invited to give their input would ensure that the information gathered benefitted from both practical and academic understanding and experience of working with people who engage in self-injurious behaviours.

Round one of the Delphi study

This section describes information about the method used in round one of the Delphi study. Round one was also exploratory in terms of gathering views about the types of attitudes towards self-injurious behaviour that could be considered important.

Round 1: participants

The expert criteria used were that participants should be either practitioners currently working with individuals who self-injure or academics who had published at least two papers in the last five years in the area of self-injury. An effort was made to include a diverse range of individuals who met the criteria of an expert. In all 333 individuals were invited to participate. Thirty-three specialists (10% response rate) from 9 countries participated. Forty two percent considered themselves to be practitioners, another 18% had published work about self-injury and the remaining 40% considered themselves both academic and practitioners. The expert group consisted of Professors (of Nursing and Psychology, n = 6), Psychologists (Counselling, Clinical and Forensic, n = 9), Psychiatrists (n = 2), Safer prisons managers (n = 2), Clinician Scientists (n =2) and other associated professions such as Assistant Professor, Trainee Research Psychologist and a Director of Research.

Experts were identified by a review of published literature from the British Psychological Society, the Australian Psychological society, publications in the area of self-injury, through an internet search for self-injury experts, and from the expert witness directory. Publications were identified by searching MEDLINE and PsychINFO using the keywords of 'self-harm' and 'self-injury'. A 'snowballing' technique (Goodman, 1961) was used by asking individuals to pass on the request to any other colleagues who might meet the expert criteria and were interested in completing the study.

Round one: materials

Participants were sent a standard email introducing the researcher. It included an information sheet and Delphi round one questionnaire as attachments. The information sheet outlined the format of the Delphi indicating that it was being conducted over three rounds and outlining what was expected of participants. Anonymity in terms of the other

experts and the possibility of withdrawing from the study were explained. The information sheet is presented in Appendix 1.

The questionnaire used for the first round of the Delphi is presented in Appendix 2. It initially asked about demographic and expert information. Experts were then asked to propose questions that would ascertain attitudes towards engaging in self-injurious behaviour. To do this experts were asked to consider questions in certain areas: components identified by the Theory of Planned Behaviour (Ajzen, 1991). Participants were requested to suggest, 'what questions could be asked to determine…..', and then given a list of components. This list of components is outlined in Figure 6.1. Participants were also encouraged to outline any other questions they thought it may be important to ask of an individual to identify their attitudes towards self-injurious behaviour.

What questions could be asked to determine……	Theory base
Whether an individual intends to engage in self-injury	'Intention' in Theory of Planned Behaviour
Where, when and how the individual may carry out self-injurious behaviour	'Perceived Behavioural Control' in Theory of Planned Behaviour
What is the individual's attitude towards self-injury	'Attitude towards the behaviour' in Theory of Planned Behaviour
How beneficial the individual thinks self-injury will be for them	'Anticipated affect' from O'Connor & Armitage (2003)
How much emphasis the individual places on the views of family & friends towards their self-injury	'Subjective norms' in Theory of Planned Behaviour
How much emphasis the individual places on the views of those around them in relation to self-injury	'Subjective norms' in Theory of Planned Behaviour
How easy or difficult the individual would find it to engage in self-injury	'Perceived Behavioural Control' in Theory of Planned Behaviour
What the individual's perception is about the control they have over engaging in self-injury	'Perceived Behavioural Control' in Theory of Planned Behaviour
How the individual expects to feel if they were to engage in self-injurious behaviour	'Anticipated affect' from O'Connor & Armitage (2003)
The individual's perception of the ease of engaging in self-injury	'Perceived Behavioural Control' in Theory of Planned Behaviour
How much control the individual perceives to have over engaging in self-injury	'Perceived Behavioural Control' in Theory of Planned Behaviour
Whether an individual sees themselves as belonging to the group of 'self-injurers'	'Subjective norms' in Theory of Planned Behaviour
What the individual's moral norms are in relation to self-injury	'Moral norms' from O'Connor & Armitage (2003)
Whether the person has engaged in self-	This question was included because of

What questions could be asked to determine……	Theory base
injury in the past	previous self-injury was the strongest established risk factor for future suicide (Klonsky et al.,2012)
What the individual feels about others who self-injure	'Subjective norms' in Theory of Planned Behaviour

Figure 6.1: Attitudinal prompt components

Round one: procedure

Ethical approval was obtained from the School of Psychology, University of Central Lancashire Ethics Committee. The Delphi was run with anonymity guaranteed in each round. Participants were contacted by email which introduced the study and informed them of a four week deadline for the first round.

The data gathered was analysed using a Grounded Theory Approach as detailed by Charnaz (2007). By using this approach researchers collect data to develop theoretical analyses. The method includes systematic and flexible guidelines for collecting and analysing qualitative data to construct theories 'grounded' in the data themselves (Charnaz, 2007). It is proposed that the researcher continues to identify patterns and themes until 'theoretical saturation' is achieved indicating that there are no new properties to emerge through data collection (Charnaz, 2007).

Round one results

Grounded theory was used to analyse the section of the study that focused on the identification of specific attitudes towards self-injury. Each question was analysed in terms of the entire set of responses given by all participants in order to identify themes from the expert panel. The results of this can be seen in Table 6.1 which depicts the questions generated by the whole group of experts to identify specific attitudes of potential value. These were presented in the form of questions that could be used to ask about attitudes for participants in later studies.

Table 6.1: Questions generated by experts following round one to identify specific attitudes towards self-injury and their theoretical base

No. N= 33	Suggested questions	Theoretical base
1	I enjoy taking care of my body	Protective question generated by experts
2	Injuring myself has been a common behaviour for me in the past	Previous self-injury (Klonsky et al.,2012)
3	Injuring myself now would be easier than the first time I injured myself	'Anticipated affect' in Theory of Planned Behaviour
4	I have experienced substantial pain in the past (e.g. through violence, injury, accident, risk taking)	No overlap with the Theory of Planned Behaviour
5	I have a moral obligation not to injure myself	'Moral norms' O'Connor & Armitage (2003)
6	Would you resent someone for preventing you from injuring yourself?	'Perceived behavioural control' in Theory of Planned Behaviour
7	Injuring myself would provide relief from my current symptoms	'Anticipated affect' O'Connor & Armitage (2003)
8	Do you have an understanding of the reasons you injure yourself?	No overlap with the Theory of Planned Behaviour
9	Injuring myself would be…(positive – negative)	'Anticipated affect' O'Connor & Armitage (2003)
10	People who are important to me understand why I injure myself	'Subjective norms' in Theory of Planned Behaviour
11	With regards to injuring myself I want to do what those who are important to me think I should do	'Subjective norms' in Theory of Planned Behaviour
12	Would you describe yourself as a 'self-injurer or self-harmer'	'Subjective norms' in Theory of Planned Behaviour
13	Rate the ease of self-injury for	'Perceived behavioural control' in

No. N= 33	Suggested questions	Theoretical base
	you....	Theory of Planned Behaviour
14	Rate the strength of your intention to injure yourself in the next week...	'Intention' in Theory of Planned Behaviour
15	Do you have any plans for how you would injure yourself?	'Intention' in Theory of Planned Behaviour
16	I have positive things in my life	Protective question generated by experts
17	Does the thought of trying to commit suicide make you feel.....	'Anticipated affect' O'Connor & Armitage (2003)
18	Does injuring yourself fit with your personal values?	'Moral norms' O'Connor & Armitage (2003)
19	Do you know the reasons behind your self-injury/thoughts of self-injury?	No overlap with the Theory of Planned Behaviour
20	Injuring myself would be…	'Anticipated affect' O'Connor & Armitage (2003)
21	Do you worry about the views of others in terms of self-injury?	'Subjective norms' in Theory of Planned Behaviour
22	People around me think I should stop injuring myself	'Subjective norms' in Theory of Planned Behaviour
23	It is in my control if I injure myself	'Perceived behavioural control' in Theory of Planned Behaviour
24	Have you found it easy to make decisions recently?	No overlap with the Theory of Planned Behaviour
25	I intend to injure myself	'Intentions' in Theory of Planned Behaviour
26	After injuring yourself would you be more likely to feel.....	'Anticipated affect' O'Connor & Armitage (2003)
27	I have experienced substantial fear in the past (e.g. violence, injury, accident, risk taking)	No overlap with the Theory of Planned Behaviour

No. N= 33	Suggested questions	Theoretical base
28	I feel part of a valued group of people (e.g. friends, family, colleagues, people around you)	'Subjective norms' in Theory of Planned Behaviour
29	Have you found everything getting on top of you?	No overlap with the Theory of Planned Behaviour
30	Do you see yourself as part of a group of people who self-injure?	'Subjective norms' in Theory of Planned Behaviour
31	My current environment is having a .....impact on my thoughts about self-injury	No overlap with the Theory of Planned Behaviour
32	I want support to explore other ways to cope with thoughts and emotions	Protective question

Round two of the Delphi study

Round two of the study aimed to start working towards a consensus of opinion about the questions which could be used to identify an individual's attitude towards self-injury.

Round two: participants, materials and procedure

Twenty two participants who had contributed in round one completed round two, a 67% response rate. A debrief sheet (see Appendix 3) was emailed to 11 experts who had not responded to the request to engage in round two. The 22 participants were emailed a questionnaire (Appendix 4) that highlighted their previous responses. They were asked to complete the new questionnaire within four weeks and were sent a reminder a week before the deadline. They also received a group summary of the data emerging from round one (Appendix 5) on which each participant's individual responses from round one were highlighted.

For round two participants were asked to reflect on their responses from the first round in light of the group responses. They were asked to confirm or change their responses

accordingly. Participants were also asked to rate their views regarding the 32 questions proposed to capture attitudes developed from round one (see Table 6.1).

Round two: results

A revised percentage of endorsement was calculated for each criterion. Percentage endorsement was calculated for the attitudinal items. These results can be seen in Table 6.2. Ratings were provided by participants relating to 32 proposed items to capture attitudes.

Table 6.2: Percentage endorsement for items experts considered important to capture attitudes following round two based on the Theory of Planned Behaviour.

Suggested questions (Rank order by 'essential' percentage) N = 22	**Essential**	**Important**	**Unsure**	**Don't like**	**Definitely should not be included**
Do you have any plans for how you would injure yourself? (1)	68%	27%	5%	0%	0%
Injuring myself would provide relief from my current symptoms (2)	64%	27%	9%	0%	0%
After injuring yourself would you be more likely to feel..... (2)	64%	27%	0%	9%	0%
Injuring myself has been a common behaviour for me in the past (4)	63%	32%	0%	5%	0%
I intend to injure myself (5)	59%	31%	5%	5%	0%
Do you have an understanding of the reasons you injure yourself? (5)	59%	32%	9%	0%	0%
Rate the strength of your intention to injure yourself in the next week... (5)	59%	27%	5%	9%	0%
It is in my control if I injure myself (5)	59%	36%	0%	5%	0%
I want support to explore other ways to cope with thoughts and emotions (9)	54%	41%	0%	5%	0%
Rate the ease of self-injury for you.... (10)	45%	45%	5%	5%	0%
Do you know the reasons	41%	55%	0%	4%	0%

Suggested questions (Rank order by 'essential' percentage) N = 22	**Essential**	**Important**	**Unsure**	**Don't like**	**Definitely should not be included**
behind your self-injury/thoughts of self-injury? (11)					
Injuring myself would be (12)	36%	41%	14%	9%	0%
Injuring myself now would be easier than the first time I injured myself (12)	36%	54%	5%	5%	0%
I have positive things in my life (12)	36%	55%	9%	0%	0%
People who are important to me understand why I injure myself (16)	32%	23%	36%	9%	0%
Does the thought of trying to commit suicide make you feel..... (17)	27%	36%	23%	5%	5%
My current environment is having a .....impact on my thoughts about self-injury (17)	27%	54%	5%	14%	0%
I have experienced substantial pain in the past (e.g. through violence, injury, accident, risk taking) (19)	23%	32%	23%	18%	0%
Would you resent someone from preventing you from injuring yourself? (20)	18%	27%	23%	32%	0%
Would you describe	18%	18%	23%	27%	14%

Suggested questions (Rank order by 'essential' percentage) N = 22	**Essential**	**Important**	**Unsure**	**Don't like**	**Definitely should not be included**
yourself as a 'self-injurer or self-harmer' (20)					
Do you worry about the views of others in terms of self-injury? (20)	18%	50%	23%	9%	0%
I have experienced substantial fear in the past (e.g. violence, injury, accident, risk taking) (20)	18%	27%	36%	14%	0%
Have you found everything getting on top of you? (20)	18%	55%	18%	9%	0%
People around me think I should stop injuring myself (25)	14%	41%	32%	13%	0%
I have a moral obligation not to injure myself (26)	9%	18%	32%	32%	9%
With regards to injuring myself I want to do what those who are important to me think I should do (26)	9%	41%	22%	23%	5%
Have you found it easy to make decisions recently? (26)	9%	32%	41%	18%	0%
Do you see yourself as part of a group of people who self-injure? (26)	9%	59%	14%	18%	0%
I feel part of a valued group of people (e.g. friends, family, colleagues, people	9%	73%	0%	18%	0%

Suggested questions (Rank order by 'essential' percentage) N = 22	Essential	Important	Unsure	Don't like	Definitely should not be included
around you) (26)					
I enjoy taking care of my body (31)	5%	41%	36%	18%	0%
Does injuring yourself fit with your personal values?(32)	0%	32%	36%	27%	0%

Round three of the Delphi study

The main aim of round three of the study was to finalise the questions that should be included to capture attitudes.

Round three: participants, materials and procedure

Twenty experts completed the round three Delphi, a 91% response rate from the previous round. For this round participants were sent a group summary of round two responses and their own individual response was highlighted to demonstrate where they had endorsed in line with other participants (Appendix 6). They were asked to consider their opinions in light of the group views. If they wanted to change their response they were able to do so, or they could make no change. They were given four weeks to reply and reminders were sent to alert them to the four week deadline. Those who had participated in round two but not in round three were emailed a debrief sheet.

Round three: results

Following the procedure outlined, the revised percentage of endorsement was calculated for each criterion. The factors that were included following round 3 results, had to reach a consensus of 80% agreement between experts either rating an item as 'essential' or 'important'. The 80% agreement level was based on suggestions within previous Delphi research (Keeney, Hasson & McKenna, 2006). From the initial 32 items proposed for attitudes, 14 were eliminated, leaving 18 items to be included.

Table 6.3: Percentage endorsement for items experts considered important to capture attitudes following round three based on the Theory of Planned Behaviour

Items based on the Theory of Planned Behaviour (n = 20)	Essential	Important
Injuring myself has been a common behaviour for me in the past	80%	20%
Injuring myself now would be easier than the first time I injured myself	35%	60%
Injuring myself would provide relief from my current symptoms	80%	15%
Do you have an understanding of the reasons you injure yourself?	70%	30%
Injuring myself would be pleasant……unpleasant	40%	40%
Rate the ease of self-injury for you....	50%	50%
Rate the strength of your intention to injure yourself in the next week...	75%	20%
Do you have any plans for how you would injure yourself	95%	5%
I have positive things in my life	35%	60%
Does the thought of trying to commit suicide make you feel.....	25%	55%
Do you know the reasons behind your self-injury/thoughts of self-injury?	45%	55%
It is in my control if I injure myself	65%	35%
I intend to injure myself	75%	25%
After injuring yourself would you be more likely to feel.....	70%	25%
I feel part of a valued group of people (e.g. friends, family, colleagues, people around you)	10%	75%
Have you found everything getting on top of you?	20%	70%
My current environment is having a .....impact on my thoughts about self-injury	20%	70%
I want support to explore other ways to cope with	65%	35%

thoughts and emotions		

Following calculation of the percentage endorsements the items which did not meet the 80% consensus rate were removed. These are shown in Figure 6.2. The brackets following each item denote the consensus of agreement;

Items based on the Theory of Planned Behaviour (consensus rate in brackets) n = 20 ***Denotes where there was a missing response**
• I enjoy taking care of my body (55%) • I have experienced substantial pain in the past (63%)* • I have a moral obligation not to injure myself (20%) • Would you resent someone for preventing you from injuring yourself (50%) • People who are important to me understand why I self-injure (55%) • With regards to injuring myself, I want to do what those who are important to me think I should do (65%) • Would you describe yourself as a self-injurer or self-harmer (25%) • Does injuring yourself fit with your personal values? (40%) • Injuring myself would be….. (75%) • Do you worry about the views of others in terms of self-injury? (75%) • People around me think I should stop injuring myself (65%) • Have you found it easy to make decisions recently (45%) • I have experienced substantial fear in the past (53%)* • Do you see yourself as part of a group of people who self-injure? (75%)

Figure 6.2: Items based on the Theory of Planned Behaviour that did not meet the 80% inclusion criteria

Finalising Theory of Planned Behaviour questions

The questions based on the Theory of Planned Behaviour were put into a measure using a 7 point Likert scale, in order to examine this aspect of the social environment in the following studies of this PhD thesis. The final questions and the rating scale used are shown in Table 6.4. These final questions arose from the experts' own suggestions of questions.

Table 6.4: Items based on the Theory of Planned Behaviour regarding engaging in self-injury following Delphi round 3

No.	Question
1	Injuring myself has been a common behaviour for me in the past ***Agree*** ***Disagree*** ***1 2 3 4 5 6 7***
2	Injuring myself now would be easier than the first time I injured myself ***Definitely*** ***Definitely not*** ***1 2 3 4 5 6 7***
3	Injuring myself would provide relief from my current symptoms ***Likely*** ***Unlikely*** ***1 2 3 4 5 6 7***
4	Do you have an understanding of the reasons you injure yourself? ***Definitely*** ***Definitely not*** ***1 2 3 4 5 6 7***
5	Injuring myself would be ***Pleasant*** ***Unpleasant*** ***1 2 3 4 5 6 7***
6	How easy would it be for you to self-injure... ***Easy*** ***Difficult*** ***1 2 3 4 5 6 7***
7	What is the strength of your intention to injure yourself in the next week... ***Strong*** ***Weak*** ***1 2 3 4 5 6 7***
8	Do you have any plans for how you would injure yourself ***Definitely*** ***Definitely not*** ***1 2 3 4 5 6 7***
9	I have positive things in my life ***Disagree*** ***Agree*** ***1 2 3 4 5 6 7***

No.	Question
10	Does the thought of trying to commit suicide make you feel.... ***Relaxed*** ***Frightened*** ***1 2 3 4 5 6 7***
11	Do you know the reasons behind your self-injury/thoughts of self-injury? ***Definitely*** ***Definitely not*** ***1 2 3 4 5 6 7***
12	It is in my control if I injure myself ***Definitely*** ***Definitely not*** ***1 2 3 4 5 6 7***
13	I intend to injure myself ***Definitely*** ***Definitely not*** ***1 2 3 4 5 6 7***
14	After injuring yourself would you be more likely to feel..... ***Relieved*** ***Guilty*** ***1 2 3 4 5 6 7***
15	I feel part of a valued group of people (e.g. friends, family, colleagues, people around you) ***Definitely not*** ***Definitely*** ***1 2 3 4 5 6 7***
16	Have you found everything getting on top of you? ***Definitely*** ***Definitely not*** ***1 2 3 4 5 6 7***
17	My current environment is having a .....impact on my thoughts about self-injury ***Negative*** ***Positive*** ***1 2 3 4 5 6 7***
18	I want support to explore other ways to cope with thoughts and emotions ***Definitely not*** ***Definitely*** ***1 2 3 4 5 6 7***

Discussion

The research question for this study was 'what questions will experts in self-injury (academics/practitioners) generate to understand someone's attitude regarding engaging in self-injurious behaviour when given basic prompts about the components of the attitude theory the *Theory of Planned Behaviour* (Ajzen, 1991)? Using the Delphi study method, 32 initial questions were produced and by round three this had reduced to 18 questions which met the 80% agreement level between experts. Of the 18 remaining questions, 5 asked about *anticipated affect*, 3 asked about *intention*, 2 asked about *perceived behavioural control*, 1 asked about *subjective norms.* There were an additional 6 questions which did not appear to have any overlap with the theory of planned behaviour, but which will be discussed below.

The area from the Theory of Planned Behaviour in which experts generated the most questions was *anticipated affect*. This concept was included in the current study based on previous work completed by O'Connor & Armitage (2003) which applied TBP to parasuicidal behaviour. Within that research anticipated affect was described as how individuals rate they will feel after engaging in a behaviour. Within the current study, questions identified included, 'injuring myself would provide relief from my current symptoms' and 'after injuring myself I would be more likely to feel…(relieved to guilty on a scale of 1-7)'. Interestingly within the O'Connor & Armitage (003) study, anticipated affect did not explain any additional variance between those who had engaged in parasuicidal behaviours and those who had not. The importance of including anticipated affect by experts may be in connection to the understanding regarding functions of self-injurious behaviour and experiences of professionals. Nock (2010) summarised the literature in relation to affect regulation being cited as the most common function for self-injury. It is possible that experts have used the opportunity to suggest questions which ask about affect regulation, on the basis that it is either well known in the literature, or within their experience is an important area to explore further. Potentially the importance of anticipated affect lies in its link to any of the functions of self-injurious behaviour which change emotion such as automatic negative reinforcement or automatic positive reinforcement as described in Nock & Prinsteins' (2004) Four Function Model.

Experts generated three questions which related to *intention* to engage in self-injury. The TBP explains that this is the most important predictor of whether an individual engages in a behaviour. The theory outlines that *intentions* are predicted by attitudes, subjective norms and perceived behavioural control. Within the current study, questions included 'I intend to injure myself' and 'what is the strength of your intention to injure yourself in the next week…'. Whilst the TPB outlines that *intentions* are predicted by other components, also prompted for within the study, experts identified specific questions to ask directly about *intention*. Within the Integrated Motivational Volitional Model of Suicidal Behavior (IMV: O'Connor, 2011) *intention* was included in the motivational phase and also in the volitional moderator phase as an *implementation intention*. For example in the current study the third question was 'I have a plan for how I will injure myself' (definitely to definitely not on a scale of 1-7) which is a question relating to how the individual intends to engage in the behaviour, this could be considered an implementation intention question. It has been outlined in research (O'Connor et al.,2012) that it is the volitional moderators which distinguish ideation from behaviour, so potentially it may be important to distinguish between general intention questions and implementation intention questions to add to further specificity and understanding in future research.

In terms of *perceived behavioural control* two questions were identified by experts for inclusion and then one question for *subjective norms*. The two *perceived behavioural control* questions were, 'it is in my control if I injure myself' and 'how easy would it be for me to self-injure' (easy to difficult on a scale of 1-7). The *subjective norms* question was, 'I feel part of a valued group of people' (definitely not to definitely on a scale of 1-7). These two elements are original components of the TPB and as such it may have been considered that they were important to include in a series of questions to ascertain attitudes towards self-injurious behaviour. However, out of the initial questions only 3 of the 32 were identified as asking about perceived behavioural control whereas 7 of the 32 were identified as asking about subjective norms. It is possible that the concept of perceived behavioural control is a more straightforward concept than subjective norms for example. The question to be answered in respect of perceived behavioural control with regards to any health related behaviour is with what ease the person believes they can engage in the behaviour. Potentially there are only so many questions which could be asked to ascertain this effectively. Subjective norms may be a more complex concept

to ascertain fully, which may represent why experts only agreed on the inclusion of one question. This is contrary to the importance of subjective norms highlighted in previous research such as O'Connor et al (2012) who found that having family members or friends who had engaged in self-injury was significantly linked to engaging in suicidal behaviours than thinking about it. The finding of the current study may also link to a potential limitation of the study in experts knowing about the subject matter of self-injury, but not necessarily knowing about important components of attitude theory in relation to engaging in health related behaviours.

In terms of other components of the TBP which were asked about, those of *moral norm* and *attitude* had no questions selected in the final 18 by experts. It is speculated that this may be due to the more abstract nature of these concepts. In O'Conner & Armitage (2003) where the concept of *moral norm* was included, it was described as personal feelings or responsibility in relation to certain behaviour. The initial prompt question in the current study asked of experts was, 'what questions could be asked to determine what the individual's moral norms are in relation to self-injury' and it is possible that this did not provide enough context or explanation to experts about this particular concept. This may also be the same issue for the concept of *attitude*. Experts were asked initially 'what questions could be asked to determine what the individual's attitudes are towards self-injury'. It is possible that due to attitudes being comprised of social, cognitive and affective components that experts struggled to suggest questions which asked about attitudes towards self-injury. Vogel & Wanke (2016) reflect this in their publication, in which a chapter is entitled, 'asking for attitudes: not all that simple after all'.

Questions which were not related to the Theory of Planned Behaviour were also identified. One question which experts included in the final 18 questions was 'injuring myself has been a common behaviour for me in the past'. In the initial prompts sent to experts in round 1 of the Delphi the only other area than those connected to the TPB that was asked about was previous self-injury. This was initially asked about due to the established literature about previous self-injury as the strongest established risk factor for future self-injury and suicide (Klonsky et al.,2012). It is interesting, that although experts could have omitted this question, it was still considered important to be retained in the final questions. It is likely that this is representative of the knowledge of practitioners and academics about the importance of considering previous self-injurious

behaviour when attempting to ascertain the likelihood of current risk of self-injury. It also appears to be in line with establishing the potential for *capacity* which is outlined to be important in the Integrated Motivational-Volitional Model of Suicidal Behaviour (O'Connor, 2011), the Interpersonal Psychological Theory of Suicidal Behaviour (Joiner, 2005) and, specifically linked to self-injury, the Integrated Model of Self Injurious Activity (Ireland & York, 2012) which is the model being explored within the current PhD.

Experts also suggested two protective questions to include in the final 18 items. The questions were, 'I have positive things in my life' and 'I want to explore other ways to cope with thoughts and emotions'. In the original questionnaire designed for round one of the Delphi, experts were not asked specifically about protective factors as this part of the PhD was focused upon attitudes towards self-injury based on TPB. However, this reflects potential understanding by practitioners and academics about adopting a salutogenic approach (Antonovsky, 1979) in the consideration of protective factors diminishing potential risk factors. This finding also contributes to the perspective of the Integrated Model of Self Injurious Activity (Ireland & York, 2012) that protective factor information needs to be explored and included in any model or theory of self-injurious behaviour. This is because existing models of self-injury cannot explain why self-injury does not occur when all suggested risk factors are present.

A further two questions asked about reasons or functions of self-injury. The questions were, 'do you know the reasons behind your self-injury/thought of self-injury' and 'do you have an understanding of the reasons you injure yourself'. Again, although the PhD aims to explore the functions of self-injury, this was not an explicit aim of this study; therefore the finding is interesting in that context. Bentley et al (2014) highlighted the importance of attempting to consider a range of functions of self-injurious behaviour. In addition to this both of Nock's models (The Four Function Model, 2004; The Integrated Theoretical Model of Self Injury) focus upon functions of self-injury, explaining that existing theories and models do not account for repeated engagement in the behaviour. Establishing understanding of functions of self-injury and incorporating them into a model of self-injurious behaviour is likely to provide essential understanding regarding potential reinforcing properties leading to repeated behaviours. The inclusion of these two questions likely represents anecdotal evidence from experts about the importance of

trying to understand why someone engages in self-injurious behaviour. The following two studies in the PhD explicitly explore functions of self-injurious behaviour in order to contribute to this understanding.

Another question identified which did not link to the TBP may ascertain information about negative cognition. The question was 'have you found everything getting on top of you'. Literature has indicated that negative cognitions can be a risk factor for self-injurious behaviour (e.g. Glassman et al.,2007). It has been outlined by Batey et al (2010) that specifics about cognitions that people engaging in self-injurious behaviour experience need further research. In addition to this the Integrated Model of Self Injurious Activity (Ireland & York, 2012) identified the importance of negative cognition within their model, but needed to conduct further research to add to specifics of what types of negative cognition may be important to include.

The final question identified which did not link to the TPB appeared to relate to the *environment* instead. The question was, 'my current environment is having a …impact on my thoughts about self-injury' (negative to positive on a scale of 1-7). As outlined by Magnusson & Stattin (2006) the environment can be split into three categories, so it is unclear whether experts were hoping to ask about the immediate situation or the proximal environment. Nevertheless, this echoes the suggestion made by Heilbron et al (2014) that both social and environmental factors are of critical importance. Further to this, research has indicated that the forensic environment can have specific impact upon self-injurious behaviour (Goomany & Dickinson, 2015). Therefore, the inclusion of an environmental question appears to indicate understanding of experts regarding the importance of the environment. Within the Integrated Model of Self Injurious Activity (Ireland & York, 2012) the concept of *negative environmental factors* was included to indicate potential importance of the environment.

Strengths and Limitations of this study

One of the main strengths of the current study was the use of the Delphi approach which allowed academics and practitioners experienced in the field of self-injurious behaviour to suggest questions that could be used to understand attitudes to self-injury of those individuals engaging in the behaviour. The prompts for the questions were based on the

parts of the Theory of Planned Behaviour (Ajzen, 1991). The generation of these questions was therefore developed using both theory and practice.

The Delphi method has limitations that were observed within this study such as the sample size and low initial response rate. Consequently there is the potential that results could have been more influenced by the opinions of a small number of experts. The results may also reflect the opinions and prejudices of participants, whereby the inclusion of those people who did not participate may have altered results. However, although the initial response rate was low, following round one attrition throughout the study was low.

Another limitation was the potential for misunderstanding some of the terms used within the study such as *attitude, subjective norms* and *moral norms* for example. These terms were based on attitude theory, with which the experts may not have been familiar. The prompts to encourage experts to offer suggestions for questions to explore attitudes in those who self-injure were based on the separate components of the attitude theory, the *Theory of Planned Behaviour*. Of the resulting 18 questions which met the 80% consensus criterion, seven of the questions did not appear to be based on any element of this particular attitudinal theory. Academics and practitioners were asked to generate questions relating to understanding attitudes, but it is possible that experts used their experience and knowledge to suggest questions they felt would be helpful when interacting with those who have self-injured, rather than questions to explore attitudes per se. Whilst this is a limitation in terms of generating questions to explore attitudes, the remaining questions generated did appear to have overlap with the Integrated Model of Self-Injurious Activity (Ireland & York, 2012) such as including environmental, protective and cognition questions. This is in keeping with the overall aims of the research.

A final limitation relates to the experience of the individual who engages in self-injury. Arguably, they should be considered an alternative group of experts. 'Internal' reasons for self-injury will be most clearly identified by individuals who have experience of engaging in the actual behaviour. Also, attitudes do not clearly outline why a person may engage in the behaviour on a given occasion. These reasons contribute to why research is beginning to adopt a functional approach to the study of self-injury (Klonsky et al.,2015). The following studies within this PhD will use this approach in order to

gain understanding of potential motivation for self-injurious behaviour. In doing so they will also allow for the possibility of more than one motivation or a mixed motive incident which was a criticism of other functional research observed by Nock & Prinstein (2004).

Issues for further research

Further research into factors leading to self-injury, protecting from self-injury and exploring attitudes is needed to evaluate their utility in clinical practice. As suggested by Coyle & Williams (2000), measures produced by research cannot be seen as 'once and for all' and must remain live instruments constantly being monitored for sensitivity and also the ability to access the underlying concept and be meaningful to different respondents. This highlights the need for further research in this area and to include consultation with those individuals who have self-injured.

The current study was exploratory, building upon available literature and aiming to gather knowledge from experts regarding attitudinal factors for self-injurious behaviour. Of crucial importance for further research is the involvement of individuals who have engaged in self-injurious behaviours in forensic settings in order to ascertain valuable information regarding risk, protective and motivation factors and also understand the impact of important areas such as attitude. This would also contribute to the exploration of models such as the Integrated Model of Self-Injurious Activity which is new and remains largely untested.

The following study uses as another group of experts those who have been involved either in engaging in self-injurious behaviour or have cared for those engaging in such behaviour. It will explore function, risk and protective factors for self-injurious behaviour through interviews with patients and staff within a secure forensic hospital for adult men. It aims to continue to further understanding of components of the Integrated Model of Self Injurious Activity which, as outlined above, is a new model of understanding.

Chapter 7

STUDY TWO: Function, risk and protective factors for self-injury in a secure forensic psychiatric population.

Introduction to study two

Study one aimed to explore what questions could be used to examine one proposed important element of the Integrated Model of Self Injurious Activity (Ireland & York, 2012), that of attitudes towards self-injury. Study two builds upon this by exploring other areas of the Integrated Model of Self Injurious Activity through the use of another set of experts, namely individuals who work directly with those who self-injure and those who actually engage in self-injurious behaviour within forensic settings. Within forensic populations self-injury prevalence is found in up to 67% of the population (Dixon-Gordon et al.,2012). Ireland & York (2012) highlight that self-injurious behaviour amongst men is a more neglected population, therefore the current study aims to explore the views and experiences of men within a secure forensic population. This is particularly important, as access to this potentially vulnerable population can be difficult due to understandable ethical considerations. However, providing such population groups with the potential to engage in such research ensures that more focus is placed on potential understanding and hopefully subsequent intervention.

The majority of prior research into risk factors for self-injurious behaviour has tended to focus upon individual and historical characteristics or the definition of self-injury which has impacted upon development of more dynamic factor understanding (Stanford & Jones, 2010). The Integrated Model of Self Injurious Activity (Ireland & York, 2012) included the component of *capacity* as directly influencing self-injury. *Capacity* is also included as important in Joiner's (2005) original theory of the Interpersonal Psychological Theory of Suicidal Behaviour and also O'Connor's (2001) Integrated Motivational-Volitional Model of Suicidal Behaviour. The Integrated Model of Self Injurious Activity also included a *propensity* element that can contribute to *capacity* and have a direct route to self-injury. The model proposed that *propensity* derives from *temperament, state* and *environmental* factors. Some initial suggestions were included as to what specific risk factors could be observed in each component, but the aim of the current study was to explore what risk factors may contribute to *temperament, state*,

environment and *negative cognition* factors from the perspectives of another expert group.

Another area of potential research highlighted by the Integrated Model of Self Injurious Activity (Ireland & York, 2012) was the inclusion of *protective* factors. Other models of self-injurious and suicidal behaviour reviewed within the literature review in Chapter 3, cannot account for self-injurious behaviour not occurring when all risk factors are present. This is especially important within a forensic population as the majority of risk factors established within the literature are observed within this high risk population (Larkin et al.,2014; Bedi et al.,2014). Ireland & York (2012) suggested that protective factors were likely to play a role in protecting individuals from engaging in self-injurious behaviour on some occasions when known risk factors were present. They did acknowledge that due to limited research into the area of protective factors for self-injury they were unable to make specific suggestions about protective factors to include. Therefore in order to use existing theory to explore findings, Self Determination Theory (SDT; Deci & Ryan, 1985) was reviewed in order to ascertain whether findings were in line with this positive psychology theory which accounts for individual and socio-environmental influences on behaviour and has been applied to other health behaviours.

Previous models of self-injury have indicated the continued importance of considering functions for self-injurious behaviour. For example, Nock & Prinsteins' (2004, 2005) Four Function Model and Nock's (2009) The Integrated Theoretical Model of Self-Injury both include functional explanations of self-injury. Nock (2009) explained the importance of examining functions of self-injury in understanding why the behaviour is repeated over time. Although useful research has been conducted in trying to establish functions for self-injury, research has not addressed the co-occurrence of more than one function in an incident of self-injury or a 'mixed motivation' (Power et al.,2016). Interestingly within study one, even though not asked to generate questions to understand functions of those engaging in self-injury, experts still generated two additional questions on this topic. This may be indicative of what academics and practitioners with knowledge of self-injurious behaviour consider important to consider when working with individuals who injure themselves.

Another area in which there is a growing awareness of importance relates to the social environment for self-injury. The Integrated Model of Self Injurious Activity (Ireland & York, 2012) specifically included a component termed '*negative environmental factors*'. It was speculated that this could include elements of the social environment which may contribute to self-injurious behaviour. This speculation was based on the literature which indicates that professionals working with those who self-injure can sometimes have negative attitudes towards this behaviour (Sandy & Shaw, 2012). Marzano et al (2012) highlighted the importance of investigating the attitudes of both staff and people detained within forensic settings. As such, the current study included an alternative group of experts, those staff who regularly work with those who engage in self-injury. Based on previous literature it was considered that it was likely that staff and patients would have some significant differences about what they considered to be risk, protective and functional factors for self-injurious behaviour.

The research question and hypotheses

Based upon the literature outlined within Chapters 1 to 5, and summarised above, the research questions and hypotheses for study two are outlined as follows:

1. **Research question**: What are the functions for self-injurious behaviour identified by individuals engaging in or caring for self-injurious behaviour within secure services? This will be identified using a functional assessment (i.e. SORC) and analysed using thematic analysis.
2. **Research question**: What are the risk factors for self-injurious behaviour identified by individuals engaging in or caring for self-injurious behaviour within secure services? This will be identified using a functional assessment (i.e. SORC) and analysed using thematic analysis?
3. **Research question**: What are the protective factors for self-injurious behaviour identified by individuals engaging in or caring for self-injurious behaviour within secure services? This will be identified using a functional assessment (i.e. SORC) and analysed using thematic analysis?
4. **Research question**: Of any risk, protective and function factors identified, where may these factors conceptually fit within the Integrated Model of Self Injurious Activity (Ireland & York, 2012)?

5. **Hypothesis**: Protective factors identified will include the three components identified within Self Determination Theory (Deci & Ryan, 1985), namely competence, relatedness and autonomy.
6. **Hypothesis**: There will be significant differences in the perceptions of staff compared to the perceptions of patients regarding function, risk and protective factors for self-injury: patients are more likely to suggest functions such as affect regulation and to receive care from others (Nock, 2008) whilst staff will be more likely to suggest functions such as attention seeking, manipulation and to achieve goods (Short et al.,2009).

Study overview

The study was split into two parts: part one was a file review and part two was an interview stage with both patients and staff. Part one involved accessing incident reports and file information about participants once their Responsible Clinicians and the individual had provided consent. The researcher then completed a functional assessment (SORC) based on the file information and an incident report of self-injurious behaviour. Part two of the study involved interviewing patients and staff. Patients were asked to take part in a guided SORC interview. They were asked about one instance when they engaged in self-injurious behaviour and then one instance when they thought about self-injury but did not engage in the behaviour. The latter SORC was completed to ascertain protective information. Staff were also asked to take part in a guided SORC interview. They were asked about an incident of self-injury in which they had been involved or responded to. Then they were also asked about a situation when they had considered a patient to be at increased risk of injuring themselves but had not done so. Again, the latter SORC was completed to gain protective information from the perspective of a staff member.

SORC Assessment

In both parts one and two, functional assessment was used. A functional assessment is a collection of methods that allows researchers to identify the reason why a specific behaviour occurs. Carr & Durrand (1985) indicated that by identifying what maintains problem behaviour, the function, it is possible either to teach replacement adaptive behaviour or alter the environment in terms of the reinforcement for performing the behaviour. The specific functional assessment approach used was a SORC (Kanfer &

Philips, 1970). The SORC is used to conceptualise a clinical problem from a behavioural perspective: 'S' represents stimulus or antecedent conditions that trigger the problem behaviour, 'O' represents organism variables or background factors related to the problematic behaviour. 'R' represents response or the behaviour occurring. Finally 'C' represents consequences of the behaviour (positive and negative reinforcement). The overall model is then used to identify the functions of the particular behaviour, in this instance self-injurious behaviour. An example of a blank SORC is presented in Appendix 7. A completed fictitious example of a SORC is also presented in Appendix 8.

Participants

This study selected participants from a medium and low secure forensic hospital. In part one 11 patients took part in a file review stage (mean age 33.8, range 19-55 years). In part two 11 different patients took part in an interview stage (mean age 28.4, range 19-55 years). Twenty five members of staff (mean nursing qualification period 9.4 years, SD 7.55) were also interviewed. Of the 25 staff members, 18 were women and seven were men (mean age 38.8. SD 11.40, range 24-58). Staff were selected at random using an SPSS randomisation process from a staff list of qualified nurses. In total 47 incidents of self-injury and 36 incidents of protective situations were reviewed (i.e. situations where a patient could have self-injured but did not do so). Thus a total of 83 incidents in total was reviewed.

In terms of the number of patients within the hospital and from which to sample, Table 7.1 indicates how many patients were lost at each stage of the process;

Table 7.1: Patients lost at each stage of the sampling procedure

Stage	Patients available
Total number of patients in the hospital	96
Total patients to sample from after removal of acute wards	60
Total patients to sample from after RC's gave consent to approach them	27
Total patients who participated in the study	22

Materials

Part one: Incident reports

Incident reports for occurrences of self-injurious behaviour were examined. These are maintained by staff within the hospital and detail the context of any behaviour deemed 'out of the norm'. This could include self-injurious behaviour. Incident reports were examined using a SORC form (Lee Evans, 1994).

Part two: Guided SORC interviews with staff and patients

Patients' verbal accounts of self-injury and staff accounts of their involvement were examined using a SORC form, as for the file review. These interviews lasted approximately one and a half hours for patients and one hour for staff.

Procedure

Ethical approval for this study was gained from the local NHS research ethics committee and approved by the University of Central Lancashire.

Part one: Incident reports

All patients approached to participate in the study were identified by their Responsible Clinician as having a history of self-injury. Responsible Clinicians were provided with an information sheet (Appendix 9). Patients were then randomly selected from the pool of patients identified by Responsible Clinicians as fitting the study criteria. This was: having a history of self-injurious behaviour, not in a current period of crisis/active psychosis, and able to provide informed consent. Random selection was undertaken through an SPSS randomisation process from an identified patient list. Consent to approach patients as appropriate was first given by Responsible Clinicians (Appendix 10). Then, patients were approached on a single occasion to obtain their consent to access their incident records. They were provided with an information sheet to assist in making the decision whether to participate and give consent (Appendices 11 and 12 respectively).

When the researcher accessed the incident reports for a certain individual if there was more than one self-injury incident the most recent incident was selected. File information was used to complete the Organism/background section of the SORC form.

The remainder of the SORC form was completed using details of the incident, recorded by staff members involved with the incident at the time.

Part two: Guided SORC interviews with staff and patients

Patients were randomly selected from the pool of patients identified by Responsible Clinicians in part one. Patients were approached on a single occasion to provide them with an information sheet (Appendix 13) and to decide whether to give informed consent to participate (Appendix 14). They were then asked to take part in a guided SORC interview about self-injury (Appendix 7), using SORC questions (Appendix 8a).

Patients were seen within the interview rooms on the ward at a time that suited them. All interviews were undertaken on a one to one basis. Patients were initially asked to think of a time when they had been motivated to engage in self-injurious behaviour. Using the question prompts (Appendix 8a) they were asked to start with the behaviour section in terms of the type of self-injury they engaged in. They were then asked about what was happening immediately before the incident (setting conditions). They were then asked about the consequences which occurred. They were asked what they felt contributed to the incident (organism variables) and then finally they were asked about why they thought it happened (function).

The discussion ended by asking participants to think of a time when they had considered self- injurious behaviour but had not engaged in it. Again, the question prompts for the SORC (Appendix 8a) were used. Participants were asked to think of a time when they considered self-injury but did not do it. They were asked the questions in the same order as the time when they self-injured. For example they were asked 'what behaviour did you do instead of self-injury'. They were asked about what had been happening before they thought of self-injury (setting conditions). The participants were then asked about the consequences, for example 'what happened after you did that' (referencing the alternative behaviour identified). The organism variables had already been identified in the SORC completed relating to an incident of self-injury. Finally the participants were asked 'why do you think you chose a different behaviour to self-injury' which provided the function. Nursing staff were made aware that patients had been discussing their views about self-injurious behaviour, but not the specifics of the discussion.

Staff participants were approached on a single occasion, given information about the content and purpose of the study (Appendix 15) and written consent was gained from them (Appendix 16). Once participants had given written consent they were offered an appointment time convenient to them. They were interviewed in a private room on their allocated ward. Interviews took approximately one hour. The purpose of the interview was to complete the SORC forms (Appendix 7) through the researcher asking prompt questions for each section (Appendix 8a).

Staff were initially asked to think of a time when they had witnessed or been involved in an incident of self-injurious behaviour by a patient. They were initially asked about the behaviour that they had witnessed. They were then asked about what had been occurring before the incident (setting conditions). They were then asked about what the consequences for the self-injurious behaviour were. They were asked what they considered the organism variables were for the patient whose self-injury they were recalling. Finally they were asked what they considered to be the function of that particular instance of self-injury.

Then the discussion focused upon asking the member of staff to talk about a time when they had considered that a patient was at risk of engaging in self-injurious behaviour, but had not engaged in it. The member of staff was asked to describe what behaviour the patient ended up doing instead of the self-injurious behaviour they had been concerned about. They were then asked about the 'setting conditions' in terms of what had happened to lead the member of staff to think the patient may injure themselves. They were then asked about what the consequences were of the alternative behaviour chosen. They were asked what the organism factors were for the patient within the incident they were recalling. Finally they were asked why in their opinion did the patient engage in an alternative behaviour or 'not injure themselves'. An informal conversation about what the individual planned to do on their day off, for example, ended the interview to ensure that discussion ended on a positive note.

Data was analysed relating to the five areas covered within the SORC proforma: setting conditions, organism factors, response, consequences and finally functions. This was completed using thematic analysis. Thematic analysis is a method for identifying, analysing and reporting patterns (themes) within data (Braun & Clarke, 2006). The steps

outlined in Braun & Clarke (2006) for conducting thematic analysis were followed in order to analyse the data from this study. To check for inter-rater reliability for themes identified a Chartered Forensic Psychologist also rated 10% of the sample of SORC analyses. They rated where they felt responses should fall within the themes identified for the separate areas of the SORC. Cohen's κ had a value of .78 between the two raters which shows 'substantial agreement' (Landis & Koch, 1977).

The functional assessments were split into two groups; times when individuals had engaged/been involved in self-injurious behaviour and times when risk for self-injury was increased but did not occur. These two groups were called 'risk situations' for the former group and 'protective situations' for the latter. They were compared when examining 'consequences' and 'functions'. The organism factors were considered overall, as were the triggers, because they could be common to risk and protective situations.

To examine the differences between staff and patients binomial logistic regression was carried out to examine which predictor variables best discriminated between staff and patients with regards to their perceptions about self-injurious behaviour.

Results

SORC Information

From the SORC proforma information gathered, relating to the organism (background factors) and response (behaviour) variables, was not analysed by thematic analysis as this could not be completed, due to participants' listing factors. Table 7.2 shows the types of self-injury reported from file reviews, patient interviews and staff interviews. Table 7.3 shows the alternative behaviours reported from patient interviews and staff interviews (i.e. the times when patients were thinking of self-injury or staff thought they were at increased risk, but they did not harm themselves).

Table 7.4 shows organism factors (i.e. background factors) which may have contributed to self-injurious behaviour. Again these results are a combination of file review, patient and staff interviews. Forty seven incidents of self-injury were gathered, 36 incidents where no self-injury occurred were gathered, a total of 83 incidents overall.

Table 7.2: Frequency of types of self-injurious behaviour reported (file, patient and staff participants)

Factor (Rank order by total) n = 47	File %	Patient %	Staff %	Total (n)	Total %
Cuts (1)	17.0	39.1	35.9	**32**	**27.8**
Self-strangulation (2)	11.3	8.7	12.8	**13**	**11.3**
Threats of suicide/self-injury (3)	9.4	0	15.4	**11**	**9.6**
Overdoses (4)	15.1	8.7	0	**10**	**8.7**
Punching (5)	7.5	8.7	7.7	**9**	**7.8**
Burning (6)	7.5	13.0	2.6	**8**	**7.0**
Scratches (7)	9.4	4.3	2.6	**7**	**6.1**
Head banging (8)	3.8	0	7.7	**5**	**4.3**
Picking scars/wounds (8)	1.9	0	10.3	**5**	**4.3**
Suicidal/self-injury ideation expressed (10)	5.7	0	0	**3**	**2.6**
Stabbing (10)	3.8	4.3	0	**3**	**2.6**
Biting (10)	3.8	0	2.6	**3**	**2.6**
Swallowing objects (13)	1.9	4.3	0	**2**	**1.7**
Bone breaking (13)	0	8.7	0	**2**	**1.7**
Insertion of objects (15)	1.9	0	0	**1**	**1.0**
Deliberately administering a shock (15)	0	0	2.6	**1**	**1.0**

Table 7.3: Alternative behaviours reported from patient interviews and staff interviews when patients were at increased risk but did not injure themselves.

Factor (Rank order by total) n = 36	Patient %	Staff %	Total (n)	Total %
Made threats to self-injure (1)	0	29.6	**8**	**21.1**
Presentation was withdrawn (2)	0	18.5	**5**	**13.2**
Voiced self-injury ideation (3)	0	14.8	**4**	**10.5**
Agitated presentation (3)	0	14.8	**4**	**10.5**

Factor (Rank order by total) n = 36	Patient %	Staff %	Total (n)	Total %
Thought of negative consequences of self-injury (5)	27.3	0	**3**	**7.9**
Aggressive to property (6)	0	7.4	**2**	**5.3**
Thought of family (6)	18.2	0	**2**	**5.3**
Thought about negative impact on others (6)	18.2	0	**2**	**5.3**
Spoke to a family member or friend (6)	18.2	0	**2**	**5.3**
Got an implement to self-injure with (10)	9.0	0	**1**	**2.6**
Thought about positive self-efficacy (10)	9.0	0	**1**	**2.6**
Made threats to others (10)	0	3.7	**1**	**2.6**
Said they couldn't cope (10)	0	3.7	**1**	**2.6**
Went to their room (10)	0	3.7	**1**	**2.6**
Responding to unseen stimuli (10)	0	3.7	**1**	**2.6**

Table 7.4: Organism factors identified from SORC proformas (file, patient and staff participants)

Factor (Rank order by total) n = 83	File %	Patient %	Staff %	Total (n)	Total %
Self-injury history (1)	9.6	17.0	21.6	**60**	**18.3**
Substance/alcohol abuse history (2)	23.3	14.9	14.9	**55**	**16.7**
Personality Disorder diagnosis (3)	12.3	12.8	15.9	**48**	**14.6**
Childhood abuse history (4)	11.0	10.6	12.5	**39**	**11.9**
Suicide history (5)	8.2	12.8	7.2	**27**	**8.2**
Mental illness diagnosis/depression (6)	5.5	10.6	5.8	**21**	**6.4**

Factor (Rank order by total) n = 83	File %	Patient %	Staff %	Total (n)	Total %
Attachment problems (7)	6.8	2.1	6.3	**19**	**5.8**
Early maladjustment (school/home/care) (8)	8.2	0	4.8	**16**	**4.9**
Learning disability diagnosis (9)	4.1	0	3.8	**11**	**3.4**
Past trauma (bereavement/PTSD) (9)	2.7	4.3	3.4	**11**	**3.4**
Bullied (11)	2.7	8.5	1.0	**8**	**2.4**
Impulsivity (12)	5.5	0	1.4	**7**	**2.1**
Injured with others (13)	0	6.4	0	**3**	**0.9**
Previous threats to injure (13)	0	0	1.4	**3**	**0.9**

'Setting Conditions' (triggers) from the SORC were then analysed using Thematic Analysis. The 83 incidents (both situations where self-injury had been engaged in and when self-injury had not occurred) were considered as a whole. This was because the triggers were causing increased risk of self-injury, whether the person actually engaged in the behaviour or not. Eight themes were identified. The results from the 'Setting Conditions' themes can be seen in Table 7.5.

Table 7.5: Setting Conditions (triggers) themes identified from SORC proforma's (file, patient and staff participants)

Theme (Rank order by total) n = 83	Example data (participant number; S=staff comment, P=patient comment, F=file comment)	File %	Patient %	Staff %	Total (n)	Total %
Unpleasant feelings/emotions	'He was really angry, impulsive anger' (S19) I'd committed the offence only recently and felt guilty' (P51).	39.5	37.7	18.1	**56**	**27.9**
The secure forensic environment	'I was resenting being in hospital' (P34), 'it was an unpredictable ward environment – quite volatile' (S26).	20.9	17.0	27.6	**47**	**23.4**
Emotional fluctuation	I felt depressed, but at the same time euphoric' (P34), 'my mood was fluctuating' (P49), 'mood fluctuations were rapid' (S18).	14.0	7.5	15.2	**26**	**13.0**
Lack of relatedness/desire for social interaction	'I wanted attention' (P21), 'I would spend time talking to other self-harmers and we would do it together' (P37), 'he felt alone and that there was no one to care for him' (S12).	2.3	17.0	13.3	**24**	**11.9**
Interpersonal difficulties	'I'd had an argument with my girlfriend' (P10), 'I'd had an argument with my friend and she had told me that she did not want to speak to me again' (P44).	4.7	9.4	9.5	**17**	**8.5**
Self-damaging behaviour	'I used spray glue and had hallucinations of bugs and my mum talking to me' (P49), 'his mood had been okay until he'd had a drink' (S3) 'he made threats to injure himself, he said that he would do it' (S27)	9.3	5.7	6.7	**14**	**7.0**
Previous	He had lots of thoughts about his past abuse (F20), 'he	7.0	3.8	4.8	**10**	**5.0**

Theme (Rank order by total) n = 83	**Example data (participant number; S=staff comment, P=patient comment, F=file comment)**	**File %**	**Patient %**	**Staff %**	**Total (n)**	**Total %**
trauma/distress	thought about his past sexual abuse as a child' (S1), 'thoughts of loss from a previous life and that my nan had died' (P43).					
Psychotic symptoms	'I was mentally unwell, I thought I was repenting and I was thinking about my sins' (P34), 'I think it was likely that he was experiencing command hallucinations' (S22).	2.3	1.9	4.8	**7**	**3.5**

The ‘Consequences’ and ‘Function’ sections of the SORC were analysed, again using thematic analysis. These were split into times when self-injury occurred and times when self-injury risk was raised but did not occur (to gather information about protective factors).

Table 7.6 shows that six themes were identified for consequences experienced after incidents of self-injury had occurred. These were based on patient and staff interviews only. File reviews were not included, because the consequences of the self-injury were rarely listed.

Table 7.7 shows that eight themes were identified for consequences experienced after an individual had been at elevated risk for self-injury but had not engaged in the behaviour. Again file reviews were not included because there was no data available for times where risk was elevated, only data on incidents which had occurred. In order to gain this data, patients and staff had been asked about what behaviour had occurred in place of thought about/suspected self-injury. Following this, the patients and staff were asked about the consequences for the alternative behaviour (e.g. what happened after that…).

Table 7.8 shows that four themes were identified relating to functions of (motivation or why) individuals who had engaged in self-injurious behaviour.

Table 7.9 shows that four themes were identified for functions of the behaviour of those people who were at increased risk of self-injury but had chosen not to engage in the behaviour. In order to gain this data, patients and staff were asked to consider why an alternative behaviour had been chosen, or why the individual had not engaged in self-injury.

Table 7.6: Consequence themes identified when self-injury had occurred (from interviews with patients and staff)

Theme (Rank order by total) n = 47	Example data (participant number; S=staff comment, P=patient comment)	Patient %	Staff %	Total (n)	Total %
Caring response from others afterwards	'The nurse asked me why I stopped doing it, she was talking to me' (P34), 'I rang my mum she would ask why, but she was never upset or scared which was a good thing. She'd tell me to ring when I was finished' (P18) 'I liked that people were talking to me about it' (P18).	30.8	23.8	**18**	**26.5**
Negative response from others afterwards	'Oh-he's done it again – it was sadness from the other patients like a broken record' (P39), 'Staff refused to do anything as he had Hep C' (S9), 'Staff were fed up of him and had the attitude of 'let's get him down and inject him' (S20).	19.2	26.2	**16**	**23.5**
Increase in negative emotions afterwards	'I felt worse, more angry and more low, I got pissed off when they increased my observations' (P40), 'I felt disappointed with myself and anxious about what I'd done' (P43) 'I regretted it because of the pain, I didn't want to do it again ever' (P34).	23.1	9.5	**10**	**14.7**
Positive regulation of emotions	'I was used to it, it felt good and it relieved tension' (P51), 'I felt better after hurting myself', 'I got back on track' (P42), 'He seemed to find it an emotional release and he	7.7	16.7	**9**	**13.2**

Theme (Rank order by total) n = 47	Example data (participant number; S=staff comment, P=patient comment)	Patient %	Staff %	Total (n)	Total %
	could manage his emotions with it' (S27).				
Habituation to the behaviour	I found it easier to do it afterwards each time' (P20) 'He thought that the cuts were like a badge of honour' (S12).	19.2	7.14	**8**	**11.8**
Environmental restrictions afterwards	'He was restrained and secluded due to the threats to others' (S15), 'He had a lid and batteries taken off him and his observations increased' (S24), 'His observations were increased to 1:1' (S23).	0	16.7	**7**	**10.3**

Table 7.7: Consequence themes identified when self-injury did not occur but there was increased risk (protective information)

Theme (Rank order by total) n = 36	Example data (participant number; S=staff comment, P=patient comment)	Patient %	Staff %	Total (n)	Total %
Cognitions of belonging afterwards	'I started feeling wanted by others and mum was better with me overall' (P37), 'I felt better after speaking to her, gran told me not to do it and to ring her at any time instead' (P42), 'I felt wanted by others' (P20).	31.8	7.7	**10**	**16.4**
Cognitions regarding negative consequences	'I would have been in trouble and lost trust and my instruments' (P20), 'I didn't want to be on increased observations again' (P18).	22.7	12.8	**10**	**16.4**
Staff support increased	He liked to engage with people, so we'd try to occupy him' (S11), 'A member of staff stayed with him for a couple of hours' (S27), 'We sat with him and gave him 1:1 time' (S20).	0	25.6	**10**	**16.4**
Environmental restrictions increased	'We removed risk items such as his shoelaces and increased his observation levels' (S27), 'The room was stripped so there were no ligature materials' (S20).	0	23.1	**9**	**14.8**
Distraction through enjoyable activities	'I started doing martial arts, gym and using a punch bag when I felt bad' (P37), 'I'd have a smoke, play football or use music as a distraction' (P49).	13.6	12.8	**8**	**13.1**
Positive	'I tried to focus on the future and getting out; I could see more of	18.2	7.7	**7**	**11.5**

Theme (Rank order by total) n = 36	Example data (participant number; S=staff comment, P=patient comment)	Patient %	Staff %	Total (n)	Total %
cognitions about the future	a future' (P42), 'I try to look forward to all the positive elements in my life' (P43).				
Cognitions regarding fear of self-injury	'I was scared to do it in terms of what might happen' (S34), 'He spoke about the fact that he did not want to experience the pain and did not want to do it again' (S19).	4.6	7.7	**4**	**6.6**
Cognitions regarding the impact on others	'The effect on others of very serious self-injury put me off in terms of what I was doing to myself' (P37), 'He said that he had thought about the effects it would have on his family and he had promised them he wouldn't do it again' (S15).	9.1	2.6	**3**	**4.9**

Table 7.8: Function themes identified from incidents when self-injury occurred

Theme (Rank order by total) n = 47	Example data (participant number; S=staff comment, P=patient comment)	Patient %	Staff %	Total (n)	Total %
Regulation or release of emotions	'To relieve stress and pain' (P40), 'Emotional control and release' (P20), 'For the buzz to regulate emotions' (P42), 'Emotional regulation-inner me' (P39), 'Due to his history of childhood experience and family, it seemed to give him a release from something' (S7), 'Internal anguish, a way of relieving the pressure' (S11).	47.4	32.1	**18**	**38.3**
Obtain a care response or any response from others	'To attract someone and get caring from them' (P34), 'To get mum and dad to be bothered about me' (P20), 'I was feeling desperate for someone to recognise that I need help' (P43), ' 'He wanted attention from others because he didn't feel cared for' (S20), 'He wanted to be on 1:1 all the time, he wanted attention and someone to be there' (S16), 'He felt left out and wanted some attention' (S27), and 'To control and regulate his emotions and to get a response from staff' (S24).	36.8	50.0	**21**	**44.7**
Form of punishment to self	'I wanted to punish myself as I was feeling guilty' (P37), 'To punish myself' (P51), 'Punishment to himself' (S12) and 'He said that it was the only way he knew of punishing himself'	10.5	3.6	**3**	**6.4**

Theme (Rank order by total) n = 47	Example data (participant number; S=staff comment, P=patient comment)	Patient %	Staff %	Total (n)	Total %
	(S19).				
Absence of effective coping strategies	'I had no other coping strategies to use' (P1), 'He had a lack of coping skills and low tolerance to distress' (S23), 'It was a coping mechanism for sexual abuse trauma' (S20), 'I didn't know how to cope' (P14) and 'He had chronic depression and no stability or normal coping strategies' (S3).	5.3	14.3	**5**	**10.6**

Table 7.9: Function themes identified when self-injury did not occur but there was increased risk (protective information)

Theme (Rank order by total) n= 36	Example data (participant number; S=staff comment, P=patient comment)	Patient %	Staff %	Total (n)	Total %
Positive cognitions about the future	'More belief in my future and life that I can manage. More good things in life, the future looks good' (P43), 'I thought of my family and my future life with them' (P44) 'I'm happy to be here' (P49).	15.4	24.0	**8**	**21.1**
Cognitions about the effect on others	'To feel normal and be trusted by others' (P39), 'I don't want to upset/let down family and friends' (P18), 'My Auntie doesn't deserve it' (P51), 'He knew it had a potential outcome for me' (S7).	23.1	4.0	**4**	**10.5**
Feelings of belonging	'I started feeling wanted' (P37), 'It's not worth it, Gran does care for me' (P42) 'I thought of my family and my future life with them' (P44) and 'Increased level of staff and he received the caring response he wanted' (S6).	30.8	56.0	**18**	**47.4**
Cognitions regarding consequences for self	'I would only be hurting myself' (P37), 'Next time I do it I could end up dead' (P51), 'I didn't want to die or hurt myself again' (P34), 'I wanted to get out of hospital quicker' (P39) and 'He was scared to do it' (S18).	30.8	16.0	**8**	**21.1**

Differences between patients and staff

One prediction made was that there would be significant differences in the perception of staff compared to the perceptions of patients regarding function, risk and protective factors for self-injury. Independent t-tests were conducted to examine differences in themes between patients and staff. The grouping variable was 'participant type' which was either staff or patient. The test variable was that particular theme being examined.

Consequences in a situation when self-injury has taken place

Independent t-tests were conducted to compare any differences between patients and staff in respect of the consequences in a situation where self-injury has taken place. There were six consequences identified following self-injury occurring. Therefore six independent t-tests were carried out. The test variable was the particular theme being explored. The grouping variable was 'participant type' which was either staff or patient. Endorsing a factor was coded as '1' whilst not endorsing a factor was coded as '2'. The results are outlined below;

1. 'Caring response from others afterwards': On average patients (M = 1.27, SD = .47) endorsed a *caring response from others* more than staff (M = 1.60, SD = .50). This difference was not significant $t(34) = -1.84$, $p = .074$.
2. 'Negative response from others afterwards': On average patients (M = 1.55, SD = .52) endorsed a *negative response from others afterwards* more than staff (M = 1.56, SD = .51). This difference was not significant $t(34) = -0.79$, $p = .938$.
3. 'Increase in negative emotions afterwards': On average patients (M = 1.45, SD = .52) endorsed an *increase in negative emotions* more than staff (M = 1.84, SD = .35). This difference was significant $t(14.72) = -2.21$, $p = .043$.
4. 'Positive regulation of emotions': On average staff (M = 1.72, SD = .46) endorsed *positive regulation of emotions* more than patients (M = 1.82, SD = .41). This difference was not significant $t(34) = .612$, $p = .544$.
5. 'Habituation to the behaviour': On average patients (M = 1.55, SD = .52) endorsed *habituation to the behaviour* more than staff (M = 1.88, SD = .33). This difference was not significant $t(13.69) = -1.96$, $p = .071$.
6. 'Environmental restrictions afterwards': On average staff (M = 1.72, SD = .46) endorsed *environmental restrictions afterwards* more than patients (M = 2.0, SD = .00). This difference was significant $t(24) = 3.06$, $p = .005$.

Consequences in a situation when increased risk for self-injury is noted but NO self-injury occurs (protective information)

Independent t-tests were conducted to compare any differences between patients and staff in respect of the consequences in a situation where self-injury had not taken place but risk had been considered raised. There were eight consequences identified following self-injury occurring. Therefore eight independent t-tests were carried out. The test variable was the particular theme being explored. The grouping variable was 'participant type' which was either staff or patient. Endorsing a factor was coded as '1' whilst not endorsing a factor was coded as '2'. The results are outlined below;

1. 'Cognitions of belonging afterwards': On average patients (M = 1.36, SD = .51) endorsed *cognitions of belonging afterwards* more than staff (M = 1.88, SD = .33). This difference was significant $t(13.96) = -3.11$, $p = .008$.
2. 'Cognitions regarding negative consequences': On average patients (M = 1.55, SD = .52) endorsed *cognitions regarding negative consequences* more than staff (M = 1.8, SD = .41). This difference was not significant $t(15.63) = -1.44$, $p = .171$.
3. 'Staff support increased': On average staff (M = 1.6, SD = .50) endorsed *staff support increased* more than patients (M = 2.00, SD = .00). This difference was significant $t(24) = 4.00$, $p = .001$.
4. 'Environmental restrictions increased': On average staff (M = 1.64, SD = .49) endorsed *environmental restrictions increased* more than patients (M = 2.00, SD = .00). This difference was significant $t(24) = 3.68$, $p = .001$.
5. 'Distraction through enjoyable activities': On average patients (M = 1.73, SD = .47) endorsed *distraction through enjoyable activities* more than staff (M = 1.80, SD = .41). This difference was not significant $t(34) = -.471$, $p = .640$.
6. 'Positive cognitions about the future': On average patients (M = 1.64, SD = .51) endorsed *positive cognitions about the future* more than staff (M = 1.88, SD = .33). This difference was not significant $t(13.95) = -1.47$, $p = .164$.
7. 'Cognitions regarding the fear of self-injury': On average staff (M = 1.88, SD = .33) endorsed *cognitions regarding the fear of self-injury* more than patients (M = 1.91, SD = .30). This difference was not significant $t(34) = .249$, $p = .805$.
8. 'Cognitions regarding the impact on others': On average patients (M = 1.82, SD = .41) endorsed *cognitions regarding the impact on others* more than staff (M = 1.96, SD = 2.0). This difference was not significant $t(12.20) = -1.105$, $p = .291$.

Functions in a situation when self-injury occurs

Independent t-tests were conducted to compare any differences between patients and staff in respect of the functions when self-injury had taken place. There were four functions identified following self-injury occurring. Therefore four independent t-tests were carried out. The test variable was the particular theme being explored. The grouping variable was 'participant type' which was either staff or patient. Endorsing a factor was coded as '1' whilst not endorsing a factor was coded as '2'. The results are outlined below;

1. 'Regulation or release of emotions': On average patients (M = 1.18, SD = .41) endorsed *regulation or release of emotions* more than staff (M = 1.64, SD = .49). This difference was significant $t(23.07) = -2.93$, $p = .008$.
2. 'Obtain a care response': On average patients (M = 1.36, SD = .51) endorsed *obtain a care response* more than staff (M = 1.44, SD = .51). This difference was not significant $t(34) = -.417$, $p = .679$.
3. 'Form of punishment to self': On average patients (M = 1.82, SD = .41) endorsed *form of punishment to self* more than staff (M = 1.936, SD = .20). This difference was not significant $t(12.21) = -1.105$, $p = .291$.
4. 'Absence of effective coping strategies': On average staff (M = 1.84, SD = .38) endorsed *absence of effective coping strategies* than patients (M = 1.91, SD = .30). This difference was not significant $t(34) = .539$, $p = .593$.

Functions in a situation when increased risk for self-injury is noted but NO self-injury occurs (protective information)

Independent t-tests were conducted to compare any differences between patients and staff in respect of the functions when no self-injury had taken place but risk was raised. There were four functions identified following a raised risk situation (but no self-injury). Therefore four independent t-tests were carried out. The test variable was the particular theme being explored. The grouping variable was 'participant type' which was either staff or patient. Endorsing a factor was coded as '1' whilst not endorsing a factor was coded as '2'. The results are outlined below;

1. 'Positive cognitions about the future': On average staff (M = 1.76, SD = .44) endorsed *positive cognitions about the future* more than patients (M = 1.82, SD = .41). This difference was not significant $t(34) = .377$, $p = .709$.

2. ‘Cognitions about the effect on others’: On average patients (M = 1.73, SD = .47) endorsed *cognitions about the effect on others* more than staff (M = 1.96, SD = .20). This difference was not significant $t(11.65) = -1.590$, p= .139.
3. ‘Feelings of belonging’: On average staff (M = 1.44, SD = .507) endorsed *feelings of belonging* more than patients (M = 1.64, SD = .51). This difference was not significant $t(34) = 1.073$, p = .291.
4. ‘Cognitions regarding consequences for self’: On average patients (M = 1.64, SD = .51) endorsed cognitions regarding consequences for self more than staff (M = 1.84, SD = .38). This difference was not significant $t(15.06) = -1.201$, p = .248.

Discussion

The research questions for this study were to explore the functions, risk factors and protective factors identified by individuals engaging in or caring for self-injurious behaviours within secure services. This was identified using a functional assessment and analysed using thematic analysis. The study generated risk and protective factors and functions of self-injurious behaviour from the perceptions of those engaging in the behaviour and those caring for individuals who self-injure. A further research question was to establish where any of the above identified may conceptually fit within the Integrated Model of Self Injurious Activity. This research question will be addressed throughout the discussion; inclusions to the model are depicted in figure 7.1. A hypothesis of this research was that, of protective factors identified, they would include the three components identified within Self Determination Theory (Deci & Ryan, 1985), namely competence, relatedness and autonomy. It was determined that protective factors which represented each of these three components was identified. The final hypothesis was that there would be significant differences in the perceptions of staff compared to the perceptions of patients regarding function, risk and protective factors for self-injury: patients are more likely to suggest functions such as affect regulation and to receive care from others (Nock, 2008) whilst staff will be more likely to suggest functions such as attention seeking, manipulation and to achieve goods (Short et al.,2009). This hypothesis was partly supported. There were differences between staff and patients; potentially the most noteworthy was that patients endorsed the function of 'regulation of emotions' significantly more than staff in line within previous research. Other differences were also observed which will be discussed.

Overall results indicated support for the various components of the Integrated Model of Self Injurious Activity (Ireland & York, 2012). For example when focusing on the organism factors (background/historical factors) identified within the SORC, the most frequently endorsed factors were 'self-injury history' and 'substance/alcohol use'. This fits with the '*capacity*' element of explanation from the original Interpersonal Psychological Theory of Suicidal Behaviour (IPTSB) and research indicating that previous involvement in self-injury or other self-damaging behaviours can lead individuals closer to future self-injury (Nock et al.,2006).

With regards to 'Setting Conditions' (triggers) identified, these also overlapped with various components of the Integrated Model of Self Injurious Activity. It is important to consider that triggers should be considered dynamic risk factors. Themes identified such as 'unpleasant emotions' and 'emotional fluctuations' could be considered 'state factors' within Integrated Model of Self Injurious Activity and also supports research highlighting emotional dysregulation as a risk factor (Gratz & Chapman, 2007). Other themes such as 'the secure forensic environment' also appear to relate to the component of the IMSIA termed, '*negative environmental factors'*. This is consistent with the research that highlighted the role of environment in the psychological wellbeing of patients (Edgerton et al.,2010). A further theme identified as a trigger was 'lack of relatedness/desire for social interaction'. This seems relevant to the '*failed belonging'* cognition identified in the original Interpersonal Psychological Theory of Suicidal Behaviour. It is recognised as an extremely important variable, and that even if capacity and perceived burdensomeness were present if the person felt like they belonged to a valued group or other, suicide may be prevented (Joiner, 2005). Joiner also suggested that interpersonal difficulties could represent a further feature of '*failed belonging*'. This is relevant to the current results as a trigger to self-injury identified was 'interpersonal difficulties'.

When examining the 'consequences' element of the SORC following self-injury it is again possible to see overlap with the Integrated Model of Self Injurious Activity and original Interpersonal Psychological Theory of Suicidal Behaviour. It is important to note that 'consequences', as identified within a SORC or functional assessment, are likely to represent factors which act as either positive or negative reinforcers for self-injury. This is because reinforcers can maintain a cycle of behaviour and, in this instance, contribute to repeated self-injury. For example, one theme identified was 'caring response from others afterwards'. It is likely that this represents a positive reinforcer, therefore something the individual may be seeking as an unmet need. This parallels with *Social Positive Reinforcement* proposed by Nock (2004) that people may use self-injury to communicate their feelings (e.g. wanting care) to others when other strategies have failed. If an individual is experiencing 'failed belonging', then a caring response from others may alleviate some of these cognitions or feelings. If the individual has received a positive reinforcer in the form of care from others, this may contribute to a maintained pattern of self-injurious behaviour.

Another reinforcer theme identified was 'regulation or release of emotions'. This fits with *Automatic Positive Reinforcement* element proposed by Nock, (2004) and the Automatic Negative Reinforcement element. If an individual engages in self-injury and they feel better afterwards, whether by increase of positive emotions or removal of negative emotions, these are both potential pathways to maintain self-injurious behaviour in the future. This finding of mixed motivation may outline the complexities of the behaviour as more than one isolated consequence or function of the behaviour is likely (Klonsky et al.,2015). An individual may receive a positive reinforcing effect from engaging in self-injury, but may also experience an increase in negative emotions in parallel. This may lead to further, exacerbated (in frequency or intensity) incidents of self-injury. The finding that both negative and positive emotions are experienced following self-injurious behaviour and how they may maintain self-injurious behaviour could be worthy of future research and contribute to the understanding of the possibilities of intervening in the behaviour to change these reinforcers. If the entire Integrated Model of Self Injurious Activity is examined, it is possible to speculate that negative consequences for the individual may continue to maintain self-injury as a behaviour, because they continue to experience aversive '*state factors'* (such as feeling guilty and a burden to others for having self-injured) which contribute to the increased *propensity* and subsequent *capacity*. However this is a purely speculative suggestion and there are many interactive elements within the Integrated Model of Self Injurious Activity which may play a role and could be considered further.

Another theme identified as a consequence was 'habituation to the behaviour'. One of the quotes illustrates this, '*I found it easier to do it afterwards each time (P20)'*. This refers to the 'capacity' element of Integrated Model of Self-Injurious Activity and the Interpersonal Psychological Theory of Suicidal Behaviour. Joiner (2005) outlined that each act of self-injury may assist an individual to habituate to the pain and fear involved in the behaviour, and subsequently take them closer to suicide.

Functions of self-injurious behaviour were also found to overlap with elements of Integrated Model of Self Injurious Activity. Four main functions were identified. 'Regulation of emotions' relates to an increased *propensity* for self-injury through the *state factors* element of the model. 'Obtaining a care response' relates to *failed*

belongingness which in turn increases *propensity* for self-injury. 'Form of punishment to self' is conceivably a *state factor* relating to psychological distress and potentially *perceived burdensomeness*. Finally 'habitual coping strategy' could be a *temperament factor* and also influence increased *capacity* as an 'habitual' form of coping. It is important to reference Nock's (2005) four functional model at this point, as the current research in terms of functions for self-injury does also indicate overlap. The functions of 'regulation or release of emotions' and 'form of punishment to self' are conceivably examples of *Automatic negative reinforcement,* i.e. self-injury is to remove a difficult emotion or thought, and possibly *Automatic positive reinforcement,* i.e. self-injury to generate a positive emotion or thought. The function of 'obtain a care response, or any response from others' is an example of *Social positive reinforcement,* i.e. self-injury to get attention or access to something in the environment.

The final function identified within the current study was 'absence of effective coping strategies'. The last of Nock's four functions is that of *Social negative reinforcement,* self-injury is to remove an interpersonal difficulty. The participant's comments do not support that they were removing an interpersonal difficulty, but this was not explicitly explored. Participants made statements such as, '*I had no other coping strategies to use (P1)*'. It is possible that self-injury was used to remove an interpersonal difficulty as a social negative reinforcer, but the current research cannot make that suggestion based on the empirical evidence.

The overlap with functions identified in Nock's (2004) Four Function Model is interesting when considering functions alone. However the Integrated Model of Self Injurious Activity appears more applicable to some of the wider context, of how self-injury is maintained and some of the complexities identified in maintenance of self-injury, such as the presence of positive and negatively reinforcing factors simultaneously. Also some functions for self-injury may be mixed. The results from the current study clearly show that more than one function was described for nearly all the incidents of self-injury described by patients.

The majority of consequences and all of the functions for situations where self-injury did not occur, protective information, were cognitive in nature. This is an interesting finding that supports previous research into the role of cognition within the Integrated Model of

Self Injurious Activity (Ireland & York, 2012). Potentially the current study also demonstrates the importance of considering cognitions in relation to protective factors for self-injurious behaviour, because some of the novel findings may not have been realised without the input of patient perspectives. This information confirms the importance of cognitive reappraisal (Voon et al.,2014). Cognitive reappraisal involves an initial recognition of a previous negative response and then reinterpreting the situation to reduce problem behaviours. Although the mechanism is not yet understood, the difference between situations where self-injury did occur and where it did not appeared to be largely cognitive. The same setting conditions were occurring but individuals appeared to have changed their appraisal of and potential attitude towards the benefits and action of self-injurious activity when they were able to engage in alternative courses of action. It could be speculated that, at some point, these individuals were able to consider both short and long term reinforcers regarding self-injurious behaviour.

When considering protective situations in which self-injury was at increased risk, but did not occur, Self-Determination Theory is applicable. With regards to *Self-Determination Theory* (Deci & Ryan, 1985), if the consequences are considered, it can be seen that there is overlap with the three innate needs of 'competence', 'relatedness' and 'autonomy'. For example, the theme of 'cognitions regarding the impact on others' relates to the need for *competence* which is how effective the individual feels in their interactions with the social environment. The themes of 'cognitions of belonging afterwards', 'staff support increased' and 'cognitions regarding the impact on others' could all be linked to *relatedness*. It is possible that achieving relatedness is protective of the 'failed belonging' component of both Integrated Model of Self-Injurious Activity and Interpersonal Psychological Theory of Suicidal Behaviour. This would be a clear and direct protective factor for 'failed belonging' which could be achieved by positive staff behaviour toward patients.

Finally, themes such as 'cognitions regarding the fear of self-injury' and 'distraction through enjoyable activities' may relate to *autonomy*. Some of the protective themes for consequences also appear to overlap with the Integrated Model of Self Injurious Activity. It is possible that for each of the areas of risk, there are potential protective factors which may moderate or counteract such areas of risk. For example 'cognitions regarding fear of self-injury' could counteract some of the impact of capacity. It is suggested by Joiner

(2005) that habituation to fear can lead to capacity for self-injury therefore it is suggested that fear is a positive, protective factor. Another example is that 'positive cognitions about the future' could be protective for 'negative cognitions'. One theme which did not appear to fit well related to 'environmental restrictions increased'. A more restrictive environment does not appear to accommodate *competence* and *autonomy* and previous research has indicated that the environmental restrictions in forensic settings actually cause further psychological distress (Goomany & Dickinson, 2015). However, within the current study, this particular consequence theme was noted only by members of staff, not by patients.

If attention is given to the themes of functions when self-injury risk was increased but not engaged in, protective factors, it is again possible to see overlap with Self Determination Theory. The theme of 'feelings of belonging' could be linked to *relatedness*, the theme of 'cognitions about the effects on others' could be linked to *competence* and finally 'positive cognitions about the future' and 'cognitions regarding consequences for self' could be linked with *autonomy*. Deci & Ryan (2000) suggested that the thwarting of such psychological needs could lead to problematic health behaviour. The results of the current study appear to indicate that there is a possibility that the reverse is also true. For example individuals within this study have a number of thwarted psychological needs which may lead to self-injury, but when they do not engage in self-injury, some of the Self Determination Theory factors appear important in meeting these thwarted needs. The promotion of the elements making up *Self Determination Theory* may protect against some problematic health behaviours, specifically self-injury.

A further hypothesis of this study was that staff and patients would show differences in their perceptions of risk, protective and functions for self-injury. Independent t-tests indicated that there were some differences. Patients endorsed *increase in negative emotions* as a consequence of self-injury significantly more than staff. The finding that *increase in negative emotions afterwards* is noteworthy as it may represent in part why individuals engage in the behaviour repeatedly. It is possible that self-injury only works for some as a short term reinforcer. Then, in the longer term there is a resurgence of negative emotions contributing to the individual's choice to re-engage in the behaviour, in order to regain the short term benefits once more. This is an area which may benefit

from further research. The finding also indicates that staff may have some limitations in understanding why patients injure themselves. This lack of understanding is a factor within the social environment and may increase further risk of self-injury (Morgan & Priest, 1991).

Another element of the hypothesis which was supported was that patients were more likely to suggest functions for self-injury such as 'affect regulation (Nock, 2008), and it was found that patients endorsed the function of *regulation or release of emotions* significantly more than staff did. This was the only significant difference in terms of the functions endorsed between patients and staff. This function of self-injury is considered the best studied within the literature (Bentley, Nock & Barlow, 2014); therefore it is noteworthy that staff do not rate this function more frequently or consider it an option as to why the individuals for whom they care may be engaging in self-injurious behaviour.

When looking at consequences of engaging in self-injury, the consequences of *environmental restrictions increased* was endorsed significantly more by staff than patients. Interestingly, when looking at the situations when risk was raised but no self-injury took place the consequences theme of *environmental restrictions increased* was again more significantly endorsed by staff than patients. This indicates a likelihood of staff to increase environmental restrictions even when the behaviour is not engaged in. Further to this, environmental restrictions was not a factor that was endorsed by patients, indicating that they do not observe this as a consequence that protects them from self-injurious behaviour. In addition to the above, when looking at the consequences in situations where risk was raised but no self-injury occurred, staff rated *staff support increased* significantly more than patients. The themes of *environmental restrictions increased* and *staff support* increased are things 'done to' or 'given to' the patient by staff which to some extent undermines the qualities or factors personal to the individual which may protect them from self-injury. As staff attitudes are likely to be an important social environmental element when considering self-injury, further research in this area will be helpful (Ireland & Quinn, 2007, Ireland & York, 2012).

Finally, when considering consequences in situations when risk was raised but self-injury did not take place, patients endorsed the consequence of *cognitions of belonging afterwards* significantly more than staff. It is likely that this relates to both *relatedness*

within Self Determination Theory (Deci & Ryan) and also potentially a counteract to failed belongingness within the Interpersonal Psychological Theory of Suicidal Behaviour (Joiner, 2005). This was the highest rated patient consequence following a situation where self-injury was considered but not engaged in. This may be important to consider in terms of the development of understanding protective factors going forwards.

Strengths and Limitations of the study

One of the main strengths of this study was the use of individuals who had engaged in or experienced self-injury as another group of experts. This can be a difficult group of participants to approach because of engagement and access issues and because they are vulnerable adults. Their perspective of self-injurious behaviour has helped to advance understanding of the issues involved, especially relating to cognitions. Unless asked, it is difficult to ascertain the cognitions of others that may be important in deciding to engage in any given behaviour. Including individuals who have engaged in self-injury has allowed this study to collect novel information about the types of cognition experienced when either engaging in self-injury, or at increased risk of the behaviour.

Another strength of the study was the use of a functional assessment approach which allowed both patients and staff to express their views about motivation for self-injurious behaviours and express multiple motivations. The value in expressing multiple motivations is that this is a relatively unexplored area as most studies have focused upon single motivation explanations. Polk & Liss (2009) indicated that one of the benefits of a functional approach was that it allowed free expression in terms of motivation and function of self-injurious behaviours. In addition to the method itself, the use of a functional assessment approach used recommendations by Nock (2009) in that the study placed an even focus upon why people stop engaging in self-injurious behaviour, and what makes them choose the behaviour on another occasion.

The small sample used in this study is a limitation, meaning that opinions and data may not be representative of the larger population. Also participants were only sampled from one hospital, therefore generalisations should be made cautiously in relation to other forensic populations. However, it included three different types of data collection and, in part, included the views of significant others to avoid the self-report bias which has been noted with functional assessments (Franklin et al. 2010). The study used a self-report

method which has biases such as socially desirable responding. If any of the elements of the incidents recounted by staff or patients were shame inducing in any way, for example, they may not have felt able to provide completely honest responses.

Part of the data collection also relied upon the use of file records to collect information about incidents. This may have been limited depending upon who reported the events and in how much detail they described what happened. There also may be bias from the reporter in terms of the factors they considered necessary to record. The file information varied in detail and quality but is representative of using 'real life' data, i.e. data which was not initially recorded for a research purpose but is part of clinical monitoring of patients.

The completion of the SORC proforma was based on a set of semi-structured questions to guide the interviewer. There is the possibility that the lead researcher who completed the interviews showed some of their own bias in the discussion. The same type of open-ended questions were asked of each participant, but depending upon the nature of the discussion, follow up questions may have been biased on the part of the researcher.

Issues for further research

The current study outlined promising findings in terms of testing the Integrated Model of Self Injurious Activity as there was a noteworthy amount of overlap between functions, risk and protective factors with the various elements of the model. The components of the original Interpersonal Psychological Theory of Suicidal Behaviour (and maintained within the new model) of 'failed belonging', 'perceived burdensomeness' and 'capacity' were all represented in some form within the model. Self Determination Theory also appears to hold some promise in the development of understanding of protective factors for self-injurious behaviour as the protective factors identified within the current study appeared to correspond to the three factors of autonomy, competence and relatedness. Figure 7.1 shows The Integrated Model of Self Injurious Activity with the findings from the current study indicated in terms of where there may be conceptual support. The figure indicates the source of the results and functions for both protective and risk situations are indicated in capitals. These areas will be explored further in the next study.

However, as noted within the limitations the sample size was small. The data produced using this methodology was considered rich and informative and provided useful areas through which to suggest the development of the Integrated Model of Self Injurious Activity (Ireland & York, 2012). As such, it is considered that a further study using this methodology but recruiting a much larger sample is likely to expand upon the findings within the current study.

Research into the understanding of individual factors and social environmental factors, including the interaction of these is likely to be of benefit. It would also be helpful to examine, with equal emphasis the factors motivating an individual to engage in self-injurious behaviour and those factors which motivate an individual to choose an alternative behaviour.

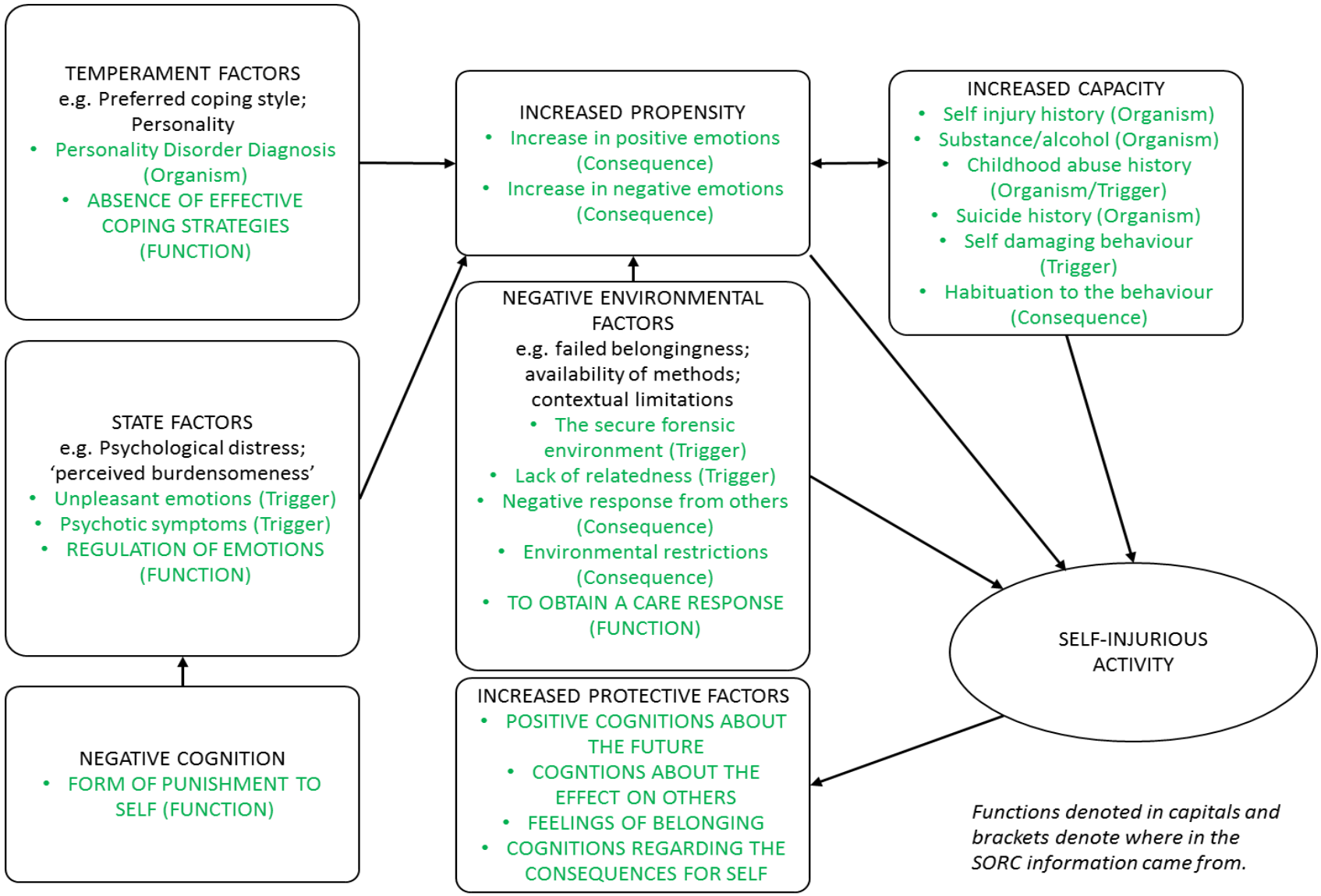

Figure 7.1: Integrated model of self-injurious activity (Ireland & York) including study 2 findings

Chapter 8

STUDY THREE: Function, risk and protective factors for self-injury within a high secure forensic psychiatric population.

Introduction to study three

As outlined in study two, one limitation of the study was the small sample size. It was considered that even though the sample was small, the findings and richness of the data generated in study two warranted carrying out a replication study. As such, the rationale based on literature provided at the start of study two remains valid for study three. Following this study three is a replication of the methodology of study two, but in a much larger sample. The only difference in participants was that in study three the participants were selected from a high secure setting. Some of the findings from study two which were particularly interesting included the *secure forensic environment* being identified as a trigger for self-injury and the finding that participants appeared mainly to report more than one motivation per incident of self-injury indicating *mixed motivations* for the behaviour. Also the finding that both positive and negative emotions appeared to be experienced following self-injury and finally that of the protective functions identified, all were cognitive in nature and overlapped with *Self-Determination Theory* (Deci & Ryan, 1985).

It was considered that the findings from study two may generalise in part, given some commonalities between patients in medium and high secure settings, and the fact that patients do move between security settings. However it was also considered that the findings may not generalise to study three, therefore this was seen as an opportunity to explore risk, protective and functional factors in one of the most high risk population groups for self-injury and to understand further what might be important to consider within the Integrated Model for Self-Injurious Activity (Ireland & York, 2012). It was considered that gathering data from participants across all levels of security within psychiatric settings contributed to more holistic understanding of these expert views. Interestingly, recent research by Vollm et al (2017) indicates that concerns have been expressed that patients may stay for too long in high levels of security. The patients who were classed as ‘long stay’ (10 years in high secure, 5 years in medium secure, or 15 years in a combination of both) were more likely to have disturbed backgrounds, self-

injurious behaviours and significant offending histories. It was also identified that these individuals were likely to have unsuccessful referrals to less secure settings. It is speculated that an individual actively engaging in self-injurious behaviour may be more unlikely to gain a referral to a lower secure setting.

It is suggested that a replication study should be carried out when the original research question is important and can contribute to the body of information supporting the discipline. Also if the replication study carries the potential to empirically support the results of the original study, either by clarifying issues raised or extending its generalisability. That the team of researchers has expertise in the subject area and has the access to adequate information related to the original study to be able to design and execute a replication. Any extensions or modifications to the original study can be based on current knowledge in the same field and lastly that the same rigor as was in the original study is possible (Explorable, 2009). Given the smaller sample size of study two, it was considered that this could be viewed as a pilot study, whilst study three aims to use the methodology of study two, but also to fill in further knowledge gaps and contribute to the generalisability of the results. If the studies indicated similar results this increases the extent to which one can generalise or apply the findings to a wider population (Adams, 2012).

Research questions and hypotheses

1. **Research question:** What are the functions for self-injurious behaviour identified by individuals engaging in or caring for self-injurious behaviour within a high secure psychiatric setting identified using a functional assessment (i.e. SORC) and analysed using thematic analysis?
2. **Research question**: What are the risk factors for self-injurious behaviour identified by individuals engaging in or caring for self-injurious behaviour within a high psychiatric setting identified using a functional assessment (i.e. SORC) and analysed using thematic analysis?
3. **Research question**: What are the protective factors for self-injurious behaviour identified by individuals engaging in or caring for self-injurious behaviour within a high secure psychiatric setting identified using a functional assessment (i.e. SORC) and analysed using thematic analysis?

4. **Research question**: Of any risk, protective and function factors identified, where may these factors conceptually fit within the Integrated Model of Self Injurious Activity (Ireland & York, 2012)?
5. **Hypothesis**: Protective factors identified will include the three components identified within Self Determination Theory (Deci & Ryan, 1985), namely competence, relatedness and autonomy.
6. **Hypothesis**: There will be significant differences in the perceptions of staff compared to the perceptions of patients regarding function, risk and protective factors for self-injury: patients are likely to suggest functions such as affect regulation and to receive care from others (Nock, 2008) whilst staff will be more likely to suggest functions such as attention seeking, manipulation and to achieve goods (Short et al.,2009).

Study overview

The study was split in two parts. Part one was a file review and part two was an interview stage with both patients and staff. Part one involved accessing incident reports and file information about participants once their Responsible Clinicians and the individual had provided consent. Using this data the researcher then completed a functional assessment (SORC; Appendix 7). Part two of the study involved interviewing patients and staff. Patients were asked to take part in a guided SORC interview (Appendix 8a). They were asked about one instance when they engaged in self-injurious behaviour and then one time whereby they thought about self-injury but did not engage in the behaviour. The second SORC was completed to ascertain protective information. Staff were also asked to take part in a guided SORC interview. They were asked about an incident of self-injury they had been involved in or responded to. Then they were asked about a time when they had considered a patient to be at increased risk of injuring themselves, but had not done so. Again, the second SORC was completed to gain protective information from a staff member perspective.

Participants

One hundred and eleven adult participants took part. They were patients and staff from a high secure hospital. Eighty patients took part and 31 members of staff. The study was split into a file review and an interview stage with patients and staff. In the file review stage 30 patients took part (mean age 33, range 25-55 years). In the interview stage 50

patients took part (mean age 37, range 25-65 years) and 31 members of staff (14 were women, 16 were men). All staff members were qualified nurses. Staff members were selected at random using an SPSS randomisation process from a list of qualified nurses. One hundred and eleven incidents of self-injury were reviewed. Fifty six protective situations were reviewed, i.e. situations where a patient could have self-injured but did not do so. A total of 167 incidents in total was explored.

Materials

A functional assessment was used. A summary of this was provided in Chapter 7. The SORC model (Kanfer & Philips, 1970) was used to continue exploration of incidents of self-injury and incidents where risk for self-injury was raised but did not take place, the latter to gather protective factor information.

Part 1: SORC analysis of incident reports

This examined incident reports for occurrences of self-injurious behaviour. Incident reports are completed by staff and detail any behaviour considered 'out of the norm' or 'increased risk'. An example of a blank SORC form can be seen in Appendix 7.

Part 2: SORC interviews with staff and patients

This examined patient verbal accounts of self-injury and also staff accounts of their involvement in incidents of self-injury. A SORC form was used as for the file review. These interviews lasted approximately 90 minutes.

Procedure

Ethical approval for this study was gained from the local NHS research ethics committee, with approval also from the University of Central Lancashire.

Part 1: SORC analysis of incident reports

Responsible Clinicians were provided with the information sheets for the study (Appendices 18 & 20). All patients approached to participate in the study were identified by their Responsible Clinician as having a history of self-injury. They were then randomly selected from the pool of patients identified by Responsible Clinicians as fitting the study criteria which were; having a history of self-injurious behaviour, not in a current period of crisis/active psychosis, and able to provide informed consent. Random

selection was undertaken through an SPSS randomisation process from a list of identified patients. Consent to approach patients was first given by Responsible Clinicians (Appendix 17). Patients were then approached on a single occasion to obtain their consent to access their incident records. They were provided with an information sheet to assist in making the decision whether to participate and give consent (Appendices 18 and 19 respectively). Incident records were examined using the SORC proforma in order to extract information about a recorded incident of self-injurious behaviour. If there was more than one incident of self-injury recorded for an individual the most recent incident was used.

Parts 2: Guided SORC interviews with staff and patients

Patients were randomly selected from the pool of patients identified by Responsible Clinicians. They were approached on a single occasion to provide them with an information sheet (Appendix 20) and to decide whether to give informed consent to participate (Appendix 19) in a guided discussion about past self-injury including suicide attempts. Interviews took approximately one hour per participant.

Patients were seen within the interview rooms on the ward at a time that suited them. All interviews were undertaken on a one to one basis. Patients were initially asked to think of a time when they had been motivated to engage in self-injurious behaviour. Using the question prompts (Appendix 8a) they were asked to start with the behaviour section in terms of the type of self-injury they engaged in. They were then asked about what was happening immediately before the incident (setting conditions). They were then asked about the consequences which occurred. They were asked what they felt contributed to the incident (organism variables) and then finally they were asked about why they thought it happened (function).

The discussion ended by asking participants to think of a time when they had considered self- injurious behaviour but had not engaged in it. Again, the question prompts for the SORC (Appendix 8a) were used. Participants were asked to think of a time when they considered self-injury but did not do it. They were asked the questions in the same order as the time when they self-injured. For example they were asked ‘what behaviour did you do instead of self-injury’. They were asked about what had been happening before they thought of self-injury (setting conditions). The participants were then asked about

the consequences, for example ‘what happened after you did that’ (referencing the alternative behaviour identified). The organism variables had already been identified in the SORC completed relating to an incident of self-injury. Finally the participants were asked ‘why do you think you chose a different behaviour to self-injury’ which provided the function. Nursing staff were made aware that patients had been discussing their views about self-injurious behaviour, but not the specifics of the discussion.

Staff participants were approached on a single occasion, given information about the content and purpose of the study (Appendix 21) and written consent was gained from them (Appendix 22). They were selected at random using an SPSS randomisation process from a list of qualified nurses. Participants were screened so that only those who had been involved in the care of a patient who had self-injured would be interviewed. Interviews took approximately one hour.

Staff were initially asked to think of a time when they had witnessed or been involved in an incident of self-injurious behaviour by a patient. They were initially asked about the behaviour that they had witnessed. They were then asked about what had been occurring before the incident (setting conditions). They were then asked about what the consequences for the self-injurious behaviour were. They were asked what they considered the organism variables were for the patient whose self-injury they were recalling. Finally they were asked what they considered to be the function of that particular instance of self-injury.

Then the discussion focused upon asking the member of staff to talk about a time when they had considered that a patient was at risk of engaging in self-injurious behaviour, but had not engaged in it. The member of staff was asked to describe what behaviour the patient ended up doing instead of the self-injurious behaviour they had been concerned about. They were then asked about the ‘setting conditions’ in terms of what had happened to lead the member of staff to think the patient may injure themselves. They were then asked about what the consequences were of the alternative behaviour chosen. They were asked what the organism factors were for the patient within the incident they were recalling. Finally they were asked why in their opinion did the patient engage in an alternative behaviour or ‘not injure themselves’. An informal conversation about what

the individual planned to do on their day off, for example, ended the interview to ensure that discussion ended on a positive note.

Data was analysed relating to the five areas covered within the SORC proforma: Setting Conditions, Organism factors, Response, Consequences and Functions. This was completed using thematic analysis. Thematic analysis is a method for identifying, analysing and reporting patterns, themes, within data (Braun & Clarke, 2006). The steps outlined in Braun & Clarke (2006) were followed in order to analyse the data from this study. To check for inter-rater reliability for themes identified a Chartered Forensic Psychologist and the lead researcher rated 10% of the sample of SORC analyses which comprised 17 incidents. Ten risk incidents and seven protective incidents were rated. The raters identified where they felt responses should fall within the themes identified for the separate areas of the SORC. Cohen's κ had a value of .9 between the two raters which shows 'almost perfect agreement' (Landis & Koch, 1977).

The functional assessments were split into two groups: times when individuals had engaged/been involved in self-injurious behaviour and times when risk for self-injury was increased but did not occur. These two groups were called 'risk situations' for the former group and 'protective situations' for the latter. These groups were compared when examining 'consequences' and 'functions'. The organism factors were considered overall as were the triggers as both could be common to risk and protective situations.

Results

Similarly to the analysis in study 2, information gathered relating to the organism (background factors) and response (behaviour) variables was not analysed by thematic analysis. This was due to participants listing factors that were relevant rather than providing qualitative information. Table 8.1 shows the types of self-injury reported from file reviews, patient interviews and staff interviews. Table 8.2 shows the frequency of alternative behaviours engaged in when no self-injury took place. Table 8.3 shows the area of the body injured from file reviews, patient interviews and staff interviews. Table 8.4 shows the implement used to self-injure from file reviews, patient interviews and staff interviews. Table 8.5 shows organism factors (i.e. background factors) which may have contributed to self-injurious behaviour.

Table 8.1: Frequency of types of self-injurious behaviour reported (file, patient and staff participants)

Factor (Rank order by total)	File %	Patient %	Staff %	Total (n)	Total %
Cuts (1)	16%	44%	18%	**37**	31%
Ligaturing (2)	6%	21%	9%	**16**	13%
Insertion (3)	10%	6%	21%	**13**	11%
Punching (4)	10%	4%	15%	**10**	8%
Head butting (4)	3%	2%	21%	**9**	8%
Scratches (6)	23%	2%	0%	**8**	7%
Swallowing (7)	16%	0%	6%	**7**	6%
Burning (8)	0%	10%	3%	**6**	5%
Overdosing (9)	0%	8%	0%	**4**	3%
Self-Stabbing (9)	3%	4%	0%	**3**	3%
Biting (11)	0%	0%	6%	**2**	2%
Abrasion (11)	6%	0%	0%	**2**	2%
Salt rubbing (13)	3%	0%	0%	**1**	1%
Attempted enucleation (13)	3%	0%	0%	**1**	1%
TOTAL				**119**	100%

Table 8.2: Alternative behaviours reported from patient interviews and staff interviews when patients were at increased risk but did not injure themselves.

Factor (Rank order by total) n = 56	Patient %	Staff %	Total (n)	Total %
Spoke to staff (1)	24.3	0	**9**	15.0
Went to sleep (2)	21.6	0	**8**	13.3
Distraction techniques (3)	18.9	0	**7**	11.7
Made threats to injure self (4)	0	26.0	**6**	10.0
Voiced self-injury ideation (5)	0	21.7	**5**	8.3
Thought of the negative consequences of self-injury (6)	8.1	0	**3**	5.0
Thought about positive self-efficacy (6)	8.1	0	**3**	5.0

Factor (Rank order by total) n = 56	Patient %	Staff %	Total (n)	Total %
Agitated presentation (6)	0	13.0	**3**	5.0
Presentation withdrawn (6)	0	13.0	**3**	5.0
Had an implement to injure self with (6)	0	13.0	**3**	5.0
Spoke to family (11)	5.4	0	**2**	3.3
Listened to music (11)	5.4	0	**2**	3.3
Got rid of an implement with which to self-injure (11)	5.4	0	**2**	3.3
Thought of family (14)	2.7	0	**1**	1.7
Went to their room (14)	0	4.3	**1**	1.7
Requested PRN (14)	0	4.3	**1**	1.7
Talking about family difficulties (14)	0	4.3	**1**	1.7

Table 8.3: Reported area of the body injured (file, patient and staff participants)

Factor (Rank order by total)	File %	Patient %	Staff %	Total (n)	Total %
Arm (1)	41%	46%	27%	**44**	**40%**
Neck (2)	19%	30%	10%	**24**	**22%**
Head (3)	6%	4%	27%	**12**	**11%**
Fist (4)	13%	4%	10%	**9**	**8%**
Penis (5)	9%	0%	10%	**6**	**5%**
Leg (5)	3%	2%	10%	**5**	**5%**
Face (7)	3%	2%	3%	**3**	**3%**
Stomach (7)	0%	6%	0%	**3**	**3%**
Groin (9)	3%	0%	3%	**2**	**2%**
Wrist (9)	0%	4%	0%	**2**	**2%**
Eye (11)	3%	0%	0%	**1**	**1%**
Ankle (11)	0%	2%	0%	**1**	**1%**
TOTAL				**111**	**100%**

Table 8.4: Implement used to self-injure (file, patient and staff participants)

Factor (Rank order by total)	File	Patient	Staff	Total (n)	Total %
Razor blade (1)	0%	21%	3%	**12**	**10%**
Bedding (1)	3%	17%	6%	**12**	**10%**
Wall (1)	6%	2%	25%	**12**	**10%**
Fist (4)	6%	6%	11%	**9**	**7%**
Plastic (5)	14%	0%	6%	**7**	**6%**
Broken CD (5)	3%	6%	8%	**7**	**6%**
Staple (7)	6%	4%	3%	**5**	**4%**
Pen (7)	6%	4%	3%	**5**	**4%**
Glasses arm (9)	6%	0%	6%	**4**	**3%**
Batteries (9)	6%	0%	6%	**4**	**3%**
Fingernails (9)	8%	2%	0%	**4**	**3%**
Broken TV (9)	6%	2%	3%	**4**	**3%**
Tablets (9)	0%	8%	0%	**4**	**3%**
Teeth (9)	6%	0%	6%	**4**	**3%**
Drinks top plastic ring (15)	3%	0%	6%	**3**	**2%**
Belt (15)	0%	4%	3%	**3**	**2%**
Metal (15)	0%	4%	3%	**3**	**2%**
Broken bottle top (15)	6%	0%	0%	**2**	**2%**
Glasses lens (15)	3%	2%	0%	**2**	**2%**
Window (15)	3%	0%	3%	**2**	**2%**
Cigarette (15)	0%	4%	0%	**2**	**2%**
Fire (15)	0%	2%	3%	**2**	**2%**
Knife (15)	0%	4%	0%	**2**	**2%**
Screw (15)	3%	2%	0%	**2**	**2%**
Pen lid (25)	3%	0%	0%	**1**	**1%**
Towel (25)	3%	0%	0%	**1**	**1%**
Keyring (25)	3%	0%	0%	**1**	**1%**
Coat zip (25)	3%	0%	0%	**1**	**1%**

Factor (Rank order by total)	File	Patient	Staff	Total (n)	Total %
Hot liquid (25)	0%	2%	0%	**1**	**1%**
Skirting board (25)	0%	2%	0%	**1**	**1%**
Cup (25)	0%	2%	0%	**1**	**1%**
Lightbulb (25)	0%	2%	0%	**1**	**1%**
TOTAL				**124**	**100%**

Table 8.5: Organism factors identified from SORC proformas (file, patient and staff participants)

Factor (Rank order by total)	File %	Patient %	Staff %	Total (n)	Total %
Self-injury history (1)	18%	17%	18%	136	18%
Mental illness diagnosis (2)	19%	17%	9%	112	15%
Personality disorder diagnosis (3)	8%	8%	12%	70	9%
Impulsivity (4)	8%	6%	8%	54	7%
Limited coping strategies (4)	8%	5%	8%	52	7%
Symptoms of psychosis (6)	7%	5%	5%	42	5%
Difficulties dealing with stress (6)	9%	4%	5%	40	5%
Command hallucinations (6)	5%	6%	4%	38	5%
Anger (9)	2%	2%	5%	25	3%
Attention seeking (9)	0%	2%	5%	21	3%
Depression diagnosis (9)	0%	5%	0%	20	3%
Experiences paranoia (12)	1%	3%	3%	19	2%
Self-injury as a habitual behaviour (12)	0%	3%	2%	19	2%
Experiences overwhelming emotions (12)	2%	1%	3%	16	2%
Need for control (12)	2%	1%	2%	12	2%
Presence of implements to injure with (16)	0%	3%	0%	10	1%
Intrusive thoughts (16)	1%	1%	2%	9	1%
History of suicide attempts (16)	3%	1%	0%	9	1%

Factor (Rank order by total)	File %	Patient %	Staff %	Total (n)	Total %
Trauma history (16)	1%	1%	1%	8	1%
Communication difficulties (16)	1%	0%	2%	6	1%
Bullied (16)	0%	1%	1%	6	1%
History of violence (16)	1%	0%	2%	5	1%
Injured with others (16)	0%	1%	1%	5	1%
Guilt regarding offending behaviour (16)	2%	1%	0%	5	1%
Low self-esteem (16)	0%	0%	1%	4	1%
Prison sentence (16)	0%	1%	0%	4	1%
Suicidal ideation (16)	0%	1%	0%	4	1%
Learning disability diagnosis (28)	1%	1%	0%	3	0%
ADHD Diagnosis (28)	1%	0%	1%	3	0%
Lacks support (28)	0%	1%	0%	3	0%
Missing family (28)	1%	1%	0%	3	0%
Threats to self-injure (28)	0%	0%	1%	2	0%
Excitement at the sight of blood (28)	0%	1%	0%	2	0%
Hopelessness (28)	0%	1%	0%	2	0%
Violent ideation (28)	0%	0%	0%	1	0%
Confusion over sexuality (28)	0%	0%	0%	1	0%
Substance abuse (28)	0%	0%	0%	1	0%
TOTAL				772	100%

The data from the 'Setting Conditions' (triggers) from the SORC was then analysed using Thematic Analysis. The 167 incidents, both situations where self-injury had been engaged in and when self-injury had not occurred, were considered as a whole. This was because the triggers were elevating risk whether the person actually engaged in the behaviour or not. Eleven themes were identified. The results from the 'Setting Conditions' themes can be seen in Table 8.6.

Table 8.6: Setting conditions (triggers) themes identified from SORC proformas (file, patient and staff participants)

Theme (Rank order by total)	Example data (participant number; S=staff comment, P=patient comment, F=file comment)	File	Patient	Staff %	Total (n)	Total %
Unpleasant feelings/emotions (1)	'Felt very low and anxious' (F15), 'feeling angry due to anniversary of own index offence' (F40), 'Felt low, flat with everything' (P3), 'He was paranoid, anxious and withdrawn' (S3).	**18%**	**22%**	**15%**	**125**	**20%**
Physical isolation (2)	'Had moved from one ward seclusion room to another' (F42), 'I had been in seclusion for a year, so I had been locked up all that time' (P39), 'Was in seclusion room with the door open due to non-compliance he had been secluded' (S10).	**10%**	**6%**	**12%**	**120**	**19%**
Failed belonging/isolated (2)	'Felt peers did not like him' (F28), 'My girlfriend didn't say she loved me when we finished the phone call, I felt my family didn't care about me' (P5), 'He had been paranoid about staff members, he had assaulted people previously as he felt that people did not like him' (S7).	**19%**	**19%**	**18%**	**119**	**19%**
Interpersonal difficulties (4)	'Two other patients had been verbally abusing him' (F15) 'I'd been verbally abused shortly before the incident but it had been going on for months' (P15), 'I had an argument with a member of staff who wasn't listening' (P27),	**6%**	**7%**	**4%**	**71**	**11%**

Theme (Rank order by total)	Example data (participant number; S=staff comment, P=patient comment, F=file comment)	File	Patient	Staff %	Total (n)	Total %
	'There had been an argument about milk on the ward' (S2).					
Secure forensic environment (5)	'Disliked the hospital environment' (F6), 'I wanted to get out of hospital' (P44), 'He had not long come from prison, he was unsettled on the ward and not doing well' (S3).	**12%**	**7%**	**20%**	**55**	**9%**
Psychotic symptoms (6)	'Hearing voices of his cousin instructing him to harm himself' (F7), 'I was hearing voices telling me, if you don't kill yourself, I'll kill your children' (P3), 'appeared to be hallucinating' (S9).	**9%**	**7%**	**6%**	**43**	**7%**
Distressing cognitions (7)	'Intrusive thoughts relating to deceased daughter' (F9) 'I'm being treated like an animal' (F12), 'I was ruminating about my index offence' (P9), 'Thinking I was a bad person and should be punished' (P24), 'he had been thinking about the fact that he had set himself back due to an assault on another patient' (S11).	**3%**	**6%**	**4%**	**37**	**6%**
Self-damaging behaviour (8)	'Stating to staff, you won't see me tomorrow I'll be dead, whilst making cutting gestures to wrists' (F8) 'I had already hurt myself previously' (P22), 'He had self-	**14%**	**22%**	**15%**	**31**	**5%**

Theme (Rank order by total)	Example data (participant number; S=staff comment, P=patient comment, F=file comment)	File	Patient	Staff %	Total (n)	Total %
	harmed the day before' (S8).					
Violent ideation/behaviour (9)	'Violent thoughts and wanted to assault others' (S2), 'He'd been quite aggressive towards others' (S6), 'Had thrown a hot coffee over a member of staff (S30).	**0%**	**0%**	**1%**	**25**	**4%**
Stressful situations (10)	'Had attended a DBT session earlier in the day and seemed stressed' (F29), 'the trigger for me was stress but over nothing really' (P12), 'the dynamics on the ward were difficult, he was stressed due to a friend leaving around Christmas time' (S13).	**6%**	**3%**	**4%**	**8**	**1%**
Physical stress (11)	'Experiencing low blood sugar levels' (F34), 'He'd not been able to sleep' (S13).	**3%**	**0%**	**2%**	**2**	**0%**

The ‘consequences’ and ‘functions’ sections of the SORC were analysed, again using thematic analysis. These were split into times when self-injury occurred and times when self-injury risk was raised but did not occur in order to gather information about protective factors. Table 8.7 shows that 13 themes were identified for consequences experiences after incidents of self-injury had occurred. These were based on file reviews, patient interviews and staff interviews. Table 8.8 shows that 11 themes were identified for consequences experienced after an individual had been at elevated risk for self-injury but had not engaged in the behaviour. These were based on patient interviews and staff interviews. In order to gain this data, patients and staff had been asked about what behaviour had occurred in place of thought about/suspected self-injury. Following this, the patients and staff were asked about the consequences for the alternative behaviour (e.g. what happened after that…).

Table 8.9 shows that nine themes were identified for functions of (motivations or why) individuals who had engaged in self-injurious behaviour. Finally Table 8.10 showed that 10 themes were identified for functions of (motivations or why) people who were at increased risk of self-injury had chosen not to engage in the behaviour. In order to gain this data, patients and staff were asked to consider why an alternative behaviour had been chosen, or why the individual had not engaged in self-injury.

Table 8.7 Consequence themes identified when self-injury had occurred (from file reviews, patient interviews and staff interviews)

Theme (Rank order by total)	Example data (participant number; F = File review, S=staff comment, P=patient comment)	File	Patient	Staff	Total (n)	Total%
Caring response of others afterwards (1)	'Spoke to nursing staff for a long period, staff appeared to reassure the patient' (F2), 'Staff cleaned up the cuts and they were caring/friendly' (P6), 'Staff gave him lots of reassurance and attention' (S22).	19%	15%	**14%**	**63**	**16%**
Environmental restrictions (2)	'Was out on increased observations and moved to a cleared side room' (F7), 'I was restrained, moved ward and placed in another seclusion' (P39), 'He spoke to staff and was placed on enhanced observations' (S3).	4%	14%	**14%**	**55**	**14%**
Experience of negative emotions (2)	'Angry and pissed off' (F11), 'I felt upset, frustrated in myself' (P13), 'I felt regret and depressed' (P16), 'He later became angry due to this incident being mentioned in relation to his care plan' (S6).	10%	14%	**13%**	**54**	**14%**
Positive regulation of emotions (4)	'Mood improved afterwards' (F13), 'I felt better and less stressed as I was doing it, felt relief afterwards' (P7), 'Felt better as I had achieved what I wanted relief; I was almost euphoric' (P54), 'The patient said he felt better and it was a release for him' (S2).	19%	11%	**15%**	**50**	**13%**
Medication or	'Taken to external hospital' (F7), 'My medication was	8%	18%	**12%**	**49**	**12%**

Theme (Rank order by total)	Example data (participant number; F = File review, S=staff comment, P=patient comment)	File	Patient	Staff	Total (n)	Total%
medical treatment (5)	changed afterwards' (P57), 'I went to accident and emergency' (P62), 'He had to wait for an operation to remove the plastic' (S7).					
Negative impact/response from others (6)	'Staff were abusive and called me a fucking idiot, other patients were annoyed too as it stopped them having soup' (P9), 'Staff were quite negative at first, they didn't seem that bothered, then they started to talk to me' (P12) 'Peers were shocked as they could see the blood and what had happened, it was difficult for staff and some had to have supervision due to it being upsetting' (S3).	6%	5%	**7%**	**44**	**11%**
Physical consequences to body (7)	'Was able to pass water but was in some pain' (F7), 'The consequences were the scars' (P6), 'I was in a coma for three days' (P33), 'The patient was visibly worried about the physical consequences of swallowing batteries' (S3)	3%	3%	**0%**	**25**	**6%**
Further self-injurious/suicidal ideation or behaviour (7)	'Shortly after scratching his arm, he attempted to strangle himself around 20 times' (F6), 'I felt like I wanted to do it again and that I had done enough time' (P35), 'About an hour later he told staff he was having urges to hang himself' (S29).	16%	12%	**10%**	**23**	**6%**

Theme (Rank order by total)	Example data (participant number; F = File review, S=staff comment, P=patient comment)	File	Patient	Staff	Total (n)	Total%
Reduction in psychotic symptoms (9)	'Said he had not heard voices to self-harm since the incident' (F17), 'The voice intensity decreased and they eventually went after 20 minutes' (P7), 'He told the staff he had wanted to clear the voices from his head' (S19).	1%	1%	**4%**	**8**	**2%**
Threatened aggression (9)	'Threw items towards staff' (F28), 'I was banging on the seclusion door, spitting through the hatch' (P64), 'He made threats towards staff, telling them that he would assault them if they came into the room' (S24).	6%	7%	**5%**	**8**	**2%**
Needs were met (including receiving 'attention') (9)	'He got more attention' (F12), 'He gained attention from staff' (S26).	1%	1%	**2%**	**6**	**2%**
Blamed or purposely shocked others (12)	'Appeared to enjoy the shock factor (F10), 'He never recognizes his own actions and always blames others' (S20), 'He seemed to quite enjoy shocking others and seeing how they react' (S34).	4%	0%	**4%**	**4**	**1%**
Used distraction techniques (12)	'Said he had used distraction techniques afterwards' (F9), 'He used TV as a way of distraction which seemed to help' (F15).	4%	0%	**0%**	**4**	**1%**

Table 8.8: Consequence themes identified when self-injury did not occur but there was increased risk (protective information)

Theme (Rank order by total)	Example data (participant number; F = File review, S=staff comment, P=patient comment)	Patient %	Staff %	Total (n)	Total %
Staff support given (1)	'I discussed the incident with evening staff' (P11), 'I spoke to staff and then asked to go into seclusion, they were caring' (P13), 'Staff responded really well, very caring' (P21), 'Staff reacted well, calmed me down' (P27).	3%	0%	**32**	**23%**
Distraction or sleep (2)	'I distracted myself and spoke to others' (P3), 'I went to sleep as I was tired' (P9), 'I started to sing whilst listening to music and then I went to sleep' (P26), 'He went to sleep and woke up fine with no issues' (S19).	3%	2%	**24**	**17%**
Positive cognitions regarding self-efficacy (3)	'I was pleased I did not act on these thoughts' (P7), 'I felt good in myself as I didn't self-harm' (P15), 'I was proud of myself' (P22), 'I had belief that I could manage myself' (P50), 'I was proud of myself' (P95), 'He actually realized that he could control his behaviour' (S21), 'He realized he could make changes which was a boost to his confidence' (S34).	14%	44%	**20**	**14%**
Emotions regulated (4)	'I started to feel better gradually' (P37), 'Felt pleased and relieved the following day' (P48), 'Felt better, almost relieved as I got under the covers' (P54), 'He seemed much	5%	15%	**17**	**12%**

Theme (Rank order by total)	Example data (participant number; F = File review, S=staff comment, P=patient comment)	Patient %	Staff %	Total (n)	Total %
	calmer the following day' (S7).				
Needs were met (including 'attention') (5)	'I got what I needed without hurting myself' (P15) 'Ironically he got what he wanted from staff as he didn't self-harm' (S37), 'He received more attention from staff members' (S8).	20%	10%	**14**	**10%**
Environmental restrictions increased (6)	'I was placed on 1:1 observations all weekend' (P23), 'I was put on 1:1 and moved to a cleared side room' (P59),	4%	0%	**11**	**8%**
Negative emotions experienced (7)	'I woke up the next day still feeling angry, I thought about hitting someone' (P11), 'The intent went, but my mood was still low' (P33), 'I felt embarrassed at the thought' (P62).	5%	0%	**6**	**4%**
Cognitions regarding the impact on others (7)	'I was happy I didn't overdose as it brought me closer to my family' (P21), 'I thought about my family and how they would be devastated' (P22), 'I didn't want to upset my mum or brother' (P33), 'He realised how it might affect his mum' (S23).	5%	2%	**5**	**4%**
Cognitions regarding negative	'I didn't self-harm as it would have stopped me from moving on' (P40), 'Self-harm won't help anything' (P50),	15%	5%	**4**	**3%**

Theme (Rank order by total)	Example data (participant number; F = File review, S=staff comment, P=patient comment)	Patient %	Staff %	Total (n)	Total %
consequences (9)	'He realized that self-harming had set him back in the past' (S29).				
Positive cognitions regarding the future (9)	'I decided that I wanted to move on, self-injury would stop that' (P10), 'I don't think I will go down that route again in the future' (P24), 'I tried to stay positive and hope that things would eventually feel better in future' (P32), 'He seemed to realise that the future would be better without self-harm' (S14).	7%	17%	**4**	**3%**
Spoke to family afterwards (11)	'I talked to my friend and chatting cheered me up' (P18), 'He phoned his family and that seemed to help too' (S30).	18%	5%	**3**	**2%**

Table 8.9: Function themes identified from incidents when self-injury occurred

Theme (Rank order by total)	Example data (participant number; F = File information S=staff comment, P=patient comment)	File %	Patient %	Staff %	Total (n)	Total %
Regulation or release of emotions (1)	'Wanted to get rid of his low mood' (F8), 'He was hoping to feel relieved afterwards' (F10),'I felt shit and self-harm works, it makes me feel better' (P6), 'He was trying to make himself feel better' (S6).	**37%**	**27%**	**15%**	**50**	**27%**
In response to psychotic symptoms (2)	'The voices were getting too much so he self-harmed to feel better' (F13), 'I did it to get rid of the voices' (P4), 'I wanted to get the chips out of me' (P45), 'He wanted to stop the voices as they were causing him distress' (S9).	**4%**	**9%**	**10%**	**30**	**16%**
To get something/change something from the environment (3)	'He wanted to get other medication' (F31), 'He wanted staff to meet his needs' (F39), 'I did it as I thought I might get moved to another room which would give some form of relief' (P22), 'I wanted to get out of seclusion' (P39).	**4%**	**5%**	**0%**	**23**	**12%**
Absence of adaptive coping methods (4)	'Absence of any other way to cope' (F19), 'It's my coping strategy, although not a very good one' (P15), 'No real thought about it, when I can't cope I go back to self-harm' (P56), 'He had learn that it was a maladaptive coping strategy which works initially but not afterwards' (S23).	**12%**	**11%**	**6%**	**19**	**10%**
Obtain a care	'He really wanted to be listened to and cared for by others'	**6%**	**13%**	**19%**	**15**	**8%**

Theme (Rank order by total)	Example data (participant number; F = File information S=staff comment, P=patient comment)	File %	Patient %	Staff %	Total (n)	Total %
response or any response from others (5)	(F11), 'I needed help and support from others and I thought this will get their attention' (P40), 'Possibly believed that staff attention would increase' (S13).					
To communicate distress to others (5)	'He wanted to show staff that he was unhappy with the situation' (F36), 'He couldn't ask for help from staff as he considered it selfish and impolite' (F42), 'I wanted to show my RC that I was angry with him' (P12), 'He wasn't able to verbalise how he was feeling' (S8).	**24%**	**14%**	**13%**	**15**	**8%**
To commit suicide (5)	'He decided it was his time to die' (F30), 'I wanted to end my life' (P3), 'Felt like suicide was the only way for it to stop' (P21), 'He wanted to kill himself and get out of the current environment' (S25).	**10%**	**7%**	**8%**	**15**	**8%**
To influence others (8)	'Getting his own back on staff' (F12), 'He wanted to gain control of the situation and prove a point' (F39), 'I wanted to get revenge on a staff member' (P51), 'It was attention seeking behaviour as he felt better afterwards' (S2), 'He wanted control/power over staff' (S3), 'He enjoyed upsetting others' (S20).	**2%**	**14%**	**4%**	**14**	**7%**
Form of self-	'He was punishing himself for the past' (F9), 'I needed to	**2%**	**1%**	**25%**	**6**	**3%**

Theme (Rank order by total)	Example data (participant number; F = File information S=staff comment, P=patient comment)	File %	Patient %	Staff %	Total (n)	Total %
punishment (9)	prove that I don't like myself because of my crime and things happened to me in childhood' (P9) 'Flashbacks of his index offence made him want to feel better for what he had done' (S35).					

Table 8.10: Function themes identified when self-injury did not occur but there was increased risk (protective information)

Theme (in rank order by total)	Example data (participant number; S=staff comment, P=patient comment)	Patient %	Staff %	Total (n)	Total %
Cognitions about the future (1)	'I wanted to progress and move on' (P7), 'I wanted to move on to a medium secure unit' (P10), 'He was hoping to get a trip home to see his mum' (S26)	21%	8%	**17**	**15%**
Cognitions about consequences (1)	'I realized it wouldn't help and it would stop the progress I had made' (P50), 'I thought about the pain it would cause' (P55), 'He didn't want to set himself back on his care pathway' (S37)	16%	8%	**17**	**15%**
Cognitions about family and belonging (3)	'I thought about my children and grandchildren' (P3), 'I wanted to be part of my family again (P13), 'thought about nurse, therapist, mum, dad, partner and felt stronger' (P54), 'he felt part of a group with his peers' (S31)	19%	4%	**15**	**14%**
Staff physical or verbal intervention (3)	'A staff member calmed me down and reduced my anger' (P27), 'excellent nursing input made him feel calm and reassured' (S19), 'Staff intervened physically so he had no ability to do it himself' (S23)	14%	29%	**15**	**14%**
Cognitions about the impact on others (5)	'I was worried about the impact it would have on my mum and sister' (P11), 'I didn't want to upset my mum' (P18), 'he didn't want to let his family down' (S30)	7%	4%	**14**	**13%**

Theme (in rank order by total)	Example data (participant number; S=staff comment, P=patient comment)	Patient %	Staff %	Total (n)	Total %
To cause disruption (6)	'I wanted to waste a bit of their time and worry about me for once' (P6), 'It was a possible excuse to start a fight and disrupt others' (S2), 'He got a buzz from controlling staff' (S6)	10%	13%	**12**	**11%**
Used an alternative coping strategy (7)	'I used distraction techniques and then didn't think about it again' (P6), 'I had other coping strategies available' (P15)	3%	0%	**10**	**9%**
Cognitions about positive self-efficacy (8)	'I looked at the positives I had and how I could have a good life in the future' (P37), 'I told myself not to feel sorry for myself and then I had a better outlook' (P39).	1%	0%	**6**	**5%**
Lack of implement available (9)	'I didn't have anything to hurt myself with' (P9), 'the motivation was there, but he had nothing to do it with' (S26), 'His room had been cleared so there was nothing he could do it with' (S14)	5%	33%	**3**	**3%**
Cognitions about the value of life (10)	'I realized that there is more to life than thinking of killing yourself' (P3), 'I value my life too much, the body is a temple and shouldn't be destroyed' (P22)	4%	0%	**2**	**2%**

Differences between patients and staff

It was predicted there would be significant differences between the perceptions of staff and of patients regarding function, risk and protective factors for self-injury. Independent t tests were used to examine the differences between staff and patients with regards to the themes generated. The grouping variable was 'participant type' which was either patient or staff. The test variable was the particular theme being explored.

Consequences in a situation when self-injury has taken place

Independent t-tests were conducted to compare any differences between patients and staff in respect of the consequences in a situation where self-injury has taken place. There were thirteen consequences identified following self-injury occurring. Therefore thirteen independent t-tests were carried out. The test variable was the particular theme being explored. The grouping variable was 'participant type' which was either staff or patient. Endorsing a factor was coded as '1' whilst not endorsing a factor was coded as '0'. The results are outlined below;

1. 'Caring response of others afterwards': On average patients (M = .58, SD = .50) endorsed *caring response of others afterwards* more than staff (M = .45, SD = .51). This difference was not significant $t(79) = 1.120$, p = .266.
2. 'Environmental restrictions': On average staff (M = .48, SD = .51) endorsed *environmental restrictions afterwards* more than patients (M = .40, SD = .50). This difference was not significant $t(79) = -.734$, p = .465.
3. 'Experience of negative emotions': On average patients (M = .68, SD = .47) endorsed *experience of negative emotions* more than staff (M = .39, SD = .50). This difference was significant $t(79) = 2.667$, p = 009.
4. 'Positive regulation of emotions': On average patients (M = .54, SD = .50) endorsed *positive regulation of emotions* more than staff (M = .42, SD = .50). This difference was not significant $t(79) = 1.050$, p = .297.
5. 'Medication or medical treatment': On average patients (M = .44, SD = .50) endorsed *medication or medical treatment* more than staff (M = .32, SD = .48). This difference was not significant $t(66.36) = 1.058$, p = .294.
6. 'Negative impact on others': On average patients (M = .52, SD = .51) endorsed *negative impact on others* more than staff (M = .45, SD = .51). This difference was not significant $t(79) = .592$, p = .555.

7. 'Physical consequences to body': On average patients (M = .28, SD = .45) endorsed *physical consequences to body* more than staff (M = .16, SD = .37). This difference was not significant $t(72.68) = 1.278$, $p = .205$.
8. 'Further self-injurious behaviour': On average staff (M = .23, SD = .43) endorsed *further self-injurious behaviour* more than patients (M = .20, SD = .40). This difference was not significant $t(79) = -.274$, $p = .785$.
9. 'Reduction in psychotic symptoms': On average patients (M = .10, SD = .30) endorsed *reduction in psychotic symptoms* more than staff (M = .00, SD = .00). This difference was significant $t(49) = 2.333$, $p = .024$.
10. 'Threatened aggression': On average staff (M = .13, SD = .34) endorsed *threatened aggression* more than patients (M = .00, SD = .00). This difference was significant $t(30) = -2.108$, $p = .043$.
11. 'Needs were met (including receiving attention)': On average staff (M = .13, SD = .34) endorsed *needs were met* more than patients (M = .02, SD = .14). This difference was not significant $t(36.50) = -1.693$, $p = .099$.
12. 'Blamed or purposely shocked others': On average staff (M = .06, SD = .25) endorsed *blamed or purposely shocked others* more than patients (M = .02, SD = .14). This difference was not significant $t(42.10) = -.906$, $p = .370$.
13. 'Used distraction techniques': A t-test was not conducted on this theme as it was only generated from the file review.

Consequences in a situation when increased risk for self-injury is noted but no self-injury occurred (protective information)

Independent t-tests were conducted to compare any differences between patients and staff in respect of the consequences in a situation where no self-injury had taken place but risk was raised. There were eleven consequences identified following self-injury occurring. Therefore eleven independent t-tests were carried out. The test variable was the particular theme being explored. The grouping variable was 'participant type' which was either staff or patient. Endorsing a factor was coded as '1' whilst not endorsing a factor was coded as '0'. The results are outlined below;

1. 'Staff support given': On average staff (M = .78, SD = .42) endorsed *staff support given* more than patients (M = .42, SD = .50). This difference was significant $t(52.02) = -2.891$, $p = .006$.

2. ‘Distraction or sleep’: On average patients (M = .61, SD = .50) endorsed *distraction or sleep* more than staff (M = .17, SD = .39). This difference was significant $t(53.22) = 3.653$, $p = .001$.
3. ‘Positive cognitions regarding self-efficacy’: On average patients (M = .55, SD = .51) endorsed *positive cognitions regarding self-efficacy* more than staff (M = .09, SD = .29). This difference was significant $t(52.26) = 4.302$, $p = .000$.
4. ‘Emotions regulated’: On average patients (M = .45, SD = .51) endorsed *emotions regulated* more than staff (M = .09, SD = .29). This difference was significant $t(52.26) = 3.449$, $p = .001$.
5. ‘Needs were met (including attention)’: On average staff (M = .30, SD = .47) endorsed *needs were met* more than patients (M = .21, SD = .41). This difference was not significant $t(54) = -.774$, $p = 442$.
6. ‘Environmental restrictions increased’: On average staff (M = .26, SD = .50) endorsed *environmental restrictions increased* more than patients (M = .15, SD = .36). This difference was not significant $t(54) = -1.004$, $p = .320$.
7. ‘Negative emotions experienced’: On average patients (M = .15, SD = .36) endorsed *negative emotions experienced* more than staff (M = .04, SD = .21). This difference was not significant $t(52.34) = 1.406$, $p = .166$.
8. ‘Cognitions regarding the impact on others’: On average patients (M = 15, SD = .36) endorsed *cognitions regarding the impact on others* more than staff (M = .00, SD = .00). This difference was significant $t(32) = 2.390$, $p = .023$.
9. ‘Cognitions regarding negative consequences’: On average patients (M = .09, SD = .29) endorsed *cognitions regarding negative consequences* more than staff (M = .04, SD = .21). This difference was not significant $t(54) = .669$, $p = .507$.
10. ‘Positive cognitions regarding the future’: On average patients (M = .12, SD = .33) endorsed *positive cognitions regarding the future* more than staff (M = .00, SD = .00). This difference was significant $t(32) = 2.101$, $p = .044$.
11. ‘Spoke to family afterwards’: On average patients (M = .09, SD = .29) endorsed *spoke to family afterwards* more than staff (M = .00, SD = .00). This difference was not significant $t(32) = 1.789$, $p = .083$.

Functions in a situation when self-injury occurs

Independent t-tests were conducted to compare any differences between patients and staff in respect of the functions in a situation when self-injury had taken place. There

were nine consequences identified following self-injury occurring. Therefore nine independent t-tests were carried out. The test variable was the particular theme being explored. The grouping variable was 'participant type' which was either staff or patient. Endorsing a factor was coded as '1' whilst not endorsing a factor was coded as '0'. The results are outlined below;

1. 'Regulation or release of emotions': On average patients (M = .48, SD = .51) endorsed *regulation or release of emotions* more than staff (M = .23, SD = .43). This difference was significant $t(71.79) = 2.432$, $p = 0.017$.
2. 'In response to psychotic symptoms': On average patients (M = .24, SD = .43) endorsed *in response to psychotic symptoms* more than staff (M = .19, SD = .40). This difference was not significant $t(79) = .483$, $p = .630$.
3. 'To get something from the environment': On average staff (M = .29, SD = .46) endorsed *to get something from the environment* more than patients (M = .22, SD = .42). This difference was not significant $t(79) = -.707$, $p = .482$.
4. 'Absence of adaptive coping methods': On average patients (M = .20, SD = .40) endorsed *absence of adaptive coping methods* more than staff (M = .10, SD = .30). This difference was not significant $t(76.27) = 1.313$, $p = .193$.
5. 'Obtain a care response': On average patients (M = .16, SD = .37) and staff (M = .16, SD = .37) endorsed *obtain a care response* at the same rates. There was no significant difference $t(79) = -.015$, $p = .988$.
6. 'To communicate distress to others': On average staff (M = .13, SD = .34) endorsed *to communicate distress to others* more than patients (M = .12, SD = .33). This difference was not significant $t(79) = -.119$, $p = .906$.
7. 'To commit suicide': On average patients (M = .24, SD = .43) endorsed *to commit suicide* more than staff (M = .06, SD = .25). This difference was significant $t(78.72) = 2.317$, $p = .023$.
8. 'To influence others': On average staff (M = .39, SD = 5.0) endorsed *to influence others* more than patients (M =.02, SD = .14). This difference was significant $t(33.00) = -4.027$, $p = .000$.
9. 'Form of self-punishment': On average patients (M = .08, SD = .27) endorsed *form of self-punishment* more than staff (M = .00, SD = .00). This difference was significant $t(49) = 2.064$, $p = .044$.

Inhibitors/protective factors in a situation when increased risk for self-injury is noted but no self-injury occurs (protective information)

Independent t-tests were conducted to compare any differences between patients and staff in respect of the functions in a situation where no self-injury had taken place but risk was raised. There were ten consequences identified following self-injury occurring. Therefore ten independent t-tests were carried out. The test variable was the particular theme being explored. The grouping variable was 'participant type' which was either staff or patient. Endorsing a factor was coded as '1' whilst not endorsing a factor was coded as '0'. The results are outlined below;

1. 'Cognitions about the future': On average patients (M = .45, SD = .51) endorsed *cognitions about the future* more than staff (M = .09, SD = .29). This difference was significant $t(52.26) = 3.449$, $p = .001$.
2. 'Cognitions about consequences': On average patients (M = .30, SD = .47) and staff (M = .30, SD = .47) endorsed *cognitions about consequences* at the same rate. There was no significant difference $t(54) = -0.10$, $p = .992$.
3. 'Cognitions about family and belonging': On average patients (M = .42, SD = .50) endorsed *cognitions about family and belonging* more than staff (M = .04, SD = .20). This difference was significant $t(45.73) = 3.902$, $p = .000$.
4. 'Staff physical or verbal intervention': On average staff (M = .65, SD = .49) endorsed *staff physical or verbal intervention* more than patients (M = .03, SD = .17). This difference was significant $t(25.95) = -5.868$, $p = .000$.
5. 'Cognitions about the impact on others': On average patients (M = .36, SD = .49) endorsed *cognitions about the impact on others* more than staff (M = .09, SD = .29). This difference was significant $t(52.79) = 2.657$, $p = .010$.
6. 'To cause disruption': On average staff (M = .35, SD = .49) endorsed *to cause disruption* more than patients (M = .12, SD = .33). This difference was not significant $t(35.92) = -1.940$, $p = .060$.
7. 'Used an alternative coping strategy': On average patients (M = .21, SD = .42) endorsed *used an alternative coping strategy* more than staff (M = .13, SD = .34). This difference was not significant $t(54) = .775$, $p = .442$.
8. 'Cognitions about positive self-efficacy': On average patients (M = .15, SD = .36) endorsed *cognitions about positive self-efficacy* more than staff (M = .04, SD = .21). This difference was not significant $t(52.34) = 1.406$, $p = .166$.

9. ‘Lack of implement available’: On average patients (M = .09, SD = .29) endorsed *lack of implement available* more than staff (M = .00, SD = .00). This difference was not significant $t(32) = 1.789$, $p = .083$.
10. ‘Cognitions about the value of life’: On average patients (M = .06, SD = .24) endorsed *cognitions about the value of life* more than staff (M = .00, SD = .00). This difference was not significant $t(32) = 1.437$, $p = .160$.

Discussion

The research questions for this study were to explore the functions, risk factors and protective factors identified by individuals engaging in or caring for self-injurious behaviours within secure services. This was identified using a functional assessment and analysed using thematic analysis. The study generated risk, protective and functions of self-injurious behaviour from the perceptions of those engaging in the behaviour and those caring for individuals who self-injure. A further research question was to establish where any of the above identified may conceptually fit within the Integrated Model of Self Injurious Activity. This research question will be addressed throughout the discussion; inclusions to the model are depicted in figure 8.1. A hypothesis of this research was that of protective factors identified they would include the three components identified within Self Determination Theory (Deci & Ryan, 1985), namely competence, relatedness and autonomy. It was determined that protective factors which represented each of these three components were identified. The final hypothesis was that there would be significant differences in the perceptions of staff compared to the perceptions of patients regarding function, risk and protective factors for self-injury: patients are more likely to suggest functions such as affect regulation and to receive care from others (Nock, 2008) whilst staff will be more likely to suggest functions such as attention seeking, manipulation and to achieve goods (Short et al.,2009). This hypothesis was supported. There were a number of differences between staff and patients in all areas of consequences and functions analysed.

When examining the nature and extent of self-injury the most frequently endorsed background factor was self-injury history. This fits with the capacity element of explanation from the original Interpersonal Psychological Theory of Suicidal Behaviour (Joiner, 2005). It also supports the findings of Nock et al. (2006) that those with a higher likelihood of suicide attempts would have a longer history of self-injury and also may use a greater variety of methods. The current research indicated that the patients from the current study used a variety of methods to harm themselves, 32 methods reported. However, within the current study the patients were all detained within a high secure environment whereby access to risk items are strictly controlled. This may mean that, if the motivation is present, individuals may seek out more unique and extreme ways in which to injure themselves.

In order to consider how results may fit with the Integrated Model of Self Injurious Activity, each section of the model will be discussed in turn. A diagram of the Integrated Model of Self Injurious Activity with additional proposed factors is presented in Figure 8.1.

The first element discussed is that of *Temperament Factors* which included suggestions such as 'preferred coping style' and 'personality'. Two of the function themes were 'absence of adaptive coping methods' and 'to influence others'. Previous research has focused on the potential benefits of certain coping styles in relation to self-injury (e.g. Williams & Hasking, 2010) rather than the absence of an effective coping strategy contributing to the decision to engage in self-injury. Potentially the current results suggest that absence of an effective coping strategy *appropriate to the context* is important to consider as a temperament factor. Research by Ireland & York (2012) showed that emotion focused coping was negatively related to suicidal ideation in female prisoners and that, in the appropriate context, emotion focused coping could be an adaptive form of coping. Absence of an effective coping strategy indicates that the risk factor is related to choosing the correct strategy in a given context rather than accessing any coping strategy.

State Factors within the Integrated Model of Self Injurious Activity consist of factors such psychological distress including the concept of perceived burdensomeness. Triggers identified within the SORC interviews such as 'unpleasant feelings/emotions', 'psychotic symptoms' and 'self-damaging behaviour' could be considered *state factors* within IMSIA. Research indicated that multiple acts of self-damaging behaviour were likely to result in longer psychiatric hospitalisation (Hillbrand et al.,1996). Triggers can be considered as dynamic risk factors for self-injurious behaviour and conceptually this fits with a *state item* in that it has the potential to change. Functions of self-injurious behavior were found to overlap with elements of the *state factors* part of the Integrated Model of Self Injurious Activity. Functions such as 'regulation of emotions', 'in response to psychotic symptoms' and 'to communicate distress to others' all appear to represent a response to psychological distress or destabilised mental health. These research findings demonstrate some overlap with Nock's (2004) Four Function Model because *Automatic Negative Reinforcement* is potentially represented by these factors as

in each of them the aversive stimulus may be removed by the act of self-injurious behaviour.

Directly linked to and conceptually influencing state factors is the element of *Negative Cognition*. The results which link to this directly are the findings that a trigger theme for self-injury was 'distressing cognitions' and one of the function themes was 'form of self-punishment'. In order to feel the need to punish oneself there needs to be a cognitive evaluation of oneself that indicates the need for punishment. Previous research has indicated that self-criticism is related to self-injurious behaviour (Gilbert et al.,2010). If that idea is considered here it may suggest that if an individual thought 'I'm a horrible person', the next thought in the chain could be 'I deserve to be punished'. In Nock's (2009) model a specific *Self-Punishment Hypothesis* was suggested to account for those individuals who engaged in self-injury to punish themselves in some way. The current research has not identified any specific cognitions beyond the experience of 'distressing cognitions'. This represents an area for future research. However, results did indicate that a number of protective themes were cognitive in nature and will be discussed in more detail later. The significance of this may be that the protective cognitions provide a valuable starting point from which to explore the negative cognitions which they potentially counteract.

Negative Environmental Factors in its existing form included availability of methods with which to injure oneself, contextual limitations and also the concept of 'failed belongingness'. The latter cognition was identified as important in the original Interpersonal Psychological Theory of Suicidal Behaviour. Triggers noted which may be significant in this regard included themes of 'the secure forensic environment', 'physical isolation', 'stressful situations', 'interpersonal difficulties' and 'failed belonging'. The first two of these appear to support research outlined by Bradley (2009) that forensic settings can exacerbate existing vulnerabilities and increase the risk of self-injury. The 'physical isolation' theme tended to relate to patients who were in seclusion because of risk they presented. The potential impact of this was outlined by Walker (2014) who noted that isolation appeared to halt improvement of mental health difficulties. One of the themes identified as a reason why individuals had engaged in self injurious behaviour was to 'change environment'. Therefore, if an individual self-injures in response to the environmental conditions, their aim may be to remove this aversive stimulus.

The themes of 'interpersonal difficulties' and 'failed belonging' appear to support previous research. Within the current Integrated Model of Self Injurious Activity, failed belongingness is considered an element of negative environmental factors. This is because Van Orden et al. (2010) suggested that it should be seen as a dynamic cognitive affective state that was influenced by the social environment. Associated with this was the finding of another theme entitled 'interpersonal difficulties'. Joiner (2005) suggested that thwarting help may represent interpersonal disconnection and thus a form of failed belonging. Another function theme identified which fits within the component of negative environmental factors is 'to obtain a care response'. If someone has struggled with failed belonging or interpersonal difficulties, then self-injury may represent a way to gain care from others. This would also fit with Nock's (2004) Social Positive Reinforcement function, whereby something positive (e.g. care) is gained following a behaviour.

A further element of *negative environmental factors* to consider was the impact not only of the physical secure environment, but also the social environment, specifically with regard to staff attitudes. Results indicated that there were some significant differences between patients and staff in views about self-injury. In terms of consequences following self-injury patients endorsed *experience of negative emotions* at a significantly higher level than staff. Although research has indicated that one consequence of self-injury is likely to be the reduction of negative emotions (e.g. Nock 2004), there is no discussion of an *increase* of negative emotions. Staff may question why a patient would engage in behaviour if it does not make things 'feel better' for them. However the behaviour may be more complex than a simple linear relationship. Interestingly, staff endorsed *threatened aggression* as a consequence of self-injury at a significantly higher rate than patients. It is possible that patients may experience negative emotions following self-injury and then cope with this by increased displays of aggression or hostility which is noted by staff. Nock (2009) suggests a potential function of self-injury as a 'Self Punishment Hypothesis', and an increase in negative emotions may meet this motivation. Indeed, within the current study patients endorsed the function of *form of self-punishment* at a significantly higher rate than staff. An alternative explanation could be that some individuals experience the reduction of some negative emotions, such as anger, but experience an increase in guilt. This may imply that some individuals

continue to engage in self-injurious behaviour consistently and on a daily basis. The Integrated Model of Self Injurious Activity could be used to suggest that increased negative emotions continue *state experiences* of *psychological distress* and lead back to increased *propensity* for self-injury. It is considered that negative cognition is likely to be very important at this point, depending on how the individual interprets the increase in negative emotion following self-injury. This fits with the findings of Batey et al. (2010) who found that those engaging in self-injurious behaviour regularly experienced more frequent intrusive and distressing cognitions than those individuals who did not regularly engage in self-injury.

Other differences observed within consequences were that patients also endorsed *reduction in psychotic symptoms* significantly more frequently than staff. The importance of this finding may be linked to the fact that one of the functions for self-injury identified within the study was *in response to psychotic symptoms*. This is a previously unreported function of self-injury within major theories of self-injurious behaviour.

Staff endorsed the function of *to influence others* at a significantly higher rate than patients, and patients endorsed the function of *to regulate emotions* and *to commit suicide* significantly more than staff. The finding that patients endorsed the function of *to regulate emotions* supports research suggesting that regulation of emotions is a well-established function of self-injury (e.g. Bentley, Nock & Barlow, 2014). The finding that staff more significantly endorse *to influence others* as a function could be perceived in two ways. Firstly, Nock's proposed function of Social Negative Reinforcement relates to self-injury to remove an interpersonal difficulty. From a purely factual description self-injury to 'influence others' may indeed remove an interpersonal difficulty. The alternative perspective is that the proposed function of 'to influence others' is recognised in previous literature which suggests that staff may hold negative attitudes towards those engaging in self-injury describing them as 'manipulative', 'Personality Disorder' and 'difficult patients' (Dickinson & Hurley, 2012). Sandy (2013) found that nurses felt that 'manipulating others and seeking attention' was a function of self-injury. Sandy proposed that these views enhance feelings of worthlessness and invalidation of such patients. Regardless of which explanation is valid, and both are possible, the Integrated Model of Self Injurious Activity can explain

that they may both lead to increased *propensity* for self-injury. This would either be through an attempt to influence others, temperament factor or environmental factor, and remove an interpersonal difficulty, negative reinforcement, or through negative attitudes from staff contributing to negative environmental factors such as failed belongingness, negative reinforcement.

Staff and patients also differed in their views about situations where patients were at increased risk of self-injury but did not carry out the behaviour. Patients were significantly more likely than staff to endorse consequences of *distraction/sleep*, *emotions regulated*, *cognitions regarding impact on others*, *positive cognitions about the future* and *cognitions about self-efficacy*. Some of these differences may occur because staff are not able to understand or access the internal experiences of patients. Without a patient telling them, they would not know that they were having cognitions about self-efficacy. When comparing differences between staff and patients as to why self-injury did not occur, the only significant difference was that *staff physical or verbal intervention* was more likely to be a staff endorsed function. It is interesting that staff take responsibility for the lack of self-injury but not for contributing to triggers for self-injury which may support Gralton et al. (2006) findings that forensic settings can promote an authoritarian style of therapeutic interaction. This may mean that staff feel that patients can and should be 'told' how to behave rather than making autonomous choices. These findings were again found within the results linking to the functions identified for engaging in alternative behaviours when risk was raised. Staff endorsed that *staff physical/verbal intervention* had protected against self-injury significantly more than patients. Patients on the other hand *endorsed cognitions about the future*, *cognitions about family and belonging* and *cognitions about the impact on others* at a significantly higher level than staff. The importance of these findings lies within the fact that most of the protective factors from a patient perspective are potentially modifiable in nature in terms of intervention to assist people in engaging in alternative effective behaviours.

With regard to *Capacity* the highest ranked background factor was 'previous self-injury'. Triggers identified included 'self-damaging behaviour' and 'violent behaviour'. A function identified was 'to commit suicide'. These findings support Joiner's (2005) view that any life threatening experience can habituate the potential pain associated with

suicide, and by extension in the current study, self-injury. Arguably, self-damaging behaviour which may include drinking, binge eating or other forms of self-injury and violent behaviour, increases risk of injury to the individual. In relation to the function identified as 'to commit suicide' the fact that individuals who are alive to report their experiences but wanted to commit suicide at the time is an important finding. It shows the importance of considering both suicidal and self-injurious behaviour as influencing the other in parallel.

The final component to consider is *Protective Factors*. The findings from the current study were found to overlap with Self Determination Theory but some protective features identified appeared to have the potential to cancel an opposing risk factor within the Integrated Model of Self Injurious Activity. For situations where risk was raised but an individual decided not to engage in self-injury the following consequence themes were identified; *positive cognitions regarding self-efficacy, cognitions regarding the impact on others* and *positive cognitions regarding the future.* This provides some support to Ireland & York's (2012) inclusion of cognition as a factor within the Integrated Model of Self Injurious Activity and to the limited research relating to the impact of cognitions on self-injurious behaviour (Najmi et al.,2007). This area of finding is very important as it represents a potential intervention point with which to support those who are engaging in self-injury. Cognitions are dynamic and changeable, meaning that if positive cognitions can be developed as protective factors there is the potential to change self-injurious behaviour.

When applying Self Determination Theory (Deci & Ryan, 1985) to the current results there is overlap with the three innate needs of *competence, relatedness* and *autonomy*. The most endorsed consequence theme was 'staff support given' which links to *relatedness*. Other themes which may link to *relatedness* were 'spoke to family afterwards', 'needs were met including attention' and 'cognitions regarding the impact on others'. The concept of *relatedness* could conceivably be the opposite pole to 'failed belongingness' from the Integrated Model of Self Injurious Activity and therefore may represent a direct protective factor. The themes of 'positive cognitions regarding self-efficacy' and 'emotions regulated' may relate to *competence*. Finally, 'cognitions regarding negative consequences', 'distraction or sleep' and 'positive cognitions about the future' may relate to *autonomy*.

One consequence theme also suggested was 'environmental restrictions increased'. It could be argued in line with suggestions made by Jacob et al. (2007) that this is counterintuitive to autonomy because decisions about the person's surroundings and life are being made by others. However it is possible that it may depend upon the interpretation of restrictions made by the individual: if they know that their risk is increasing in terms of self-injurious behaviour they may interpret that staff impose environmental restrictions as a caring gesture. This is speculation but it would be interesting to explore how patients perceive increased environmental restrictions when they do not engage in self-injury.

When analysing the functions which generated protective information the overlap with Self Determination Theory was apparent. It was also seen that a high number of function themes were cognitive in nature. There were five separate types of cognition identified which motivated people not to engage in an act of self-injurious behaviour. This again supports research highlighting the importance of cognition (Najmi et al.,2007) and also indicates that protective cognitions could have an impact on negative cognitions which may influence other areas of the Integrated Model of Self Injurious Activity. With regards to the components of Self Determination Theory, functions such as 'cognitions about family and belonging' and 'staff physical or verbal intervention' may link to *relatedness*. 'Cognitions about the impact on others', 'cognitions about positive self-efficacy', 'used an alternative coping strategy' and 'to cause disruption' could be linked to *competence*. The 'alternative coping strategy' echoes findings within current literature about the importance of coping strategy (Chapman et al.,2013). It may also confirm the earlier finding that an individual needs to know alternative coping strategies, but also which are appropriate in a certain context. Finally 'cognitions about the value of life', 'cognitions regarding consequences' and cognitions about the future' could be linked to *autonomy*. As the findings are largely cognitive in nature it is possible that this supports the impact of cognitive reappraisal outlined by Voon et al. (2014). The majority of participants in the study had at some point injured themselves therefore, in order to have 'protective cognitions', it is likely that some form of cognitive reappraisal had taken place.

An overall conclusion was that most participants generated more than one function or motivation for engaging in self-injurious behaviour. As discussed, many of the research findings from the current study overlap with the functions suggested in Nock's (2004) model, but the model does not allow or explain the occurrence of multiple functions. These may be better represented by considering the different pathways to self-injury through the Integrated Model of Self Injurious Activity. For example a temperament factor and a separate state factor may increase propensity to self-injure initially, but after an act of self-injury there may be co-occurring positive and negative reinforcing factors contributing to mixed functions. An individual may feel failed belonging, a negative environmental factor, and psychologically distressed, a state factor, both of which contribute to propensity, but the functions of self-injury may be to regulate emotions and also to obtain a care response.

Strengths and Limitations of the study

One of the main strengths of this study was the large sample size from a potentially difficult to access population for parts one and two. Thirty patients took part in the file review stage and 50 patients took part in the interview stage. Thirty one members of staff also took part in the interview stage. The sample therefore included a large group of experts who have worked with those exhibiting self-injurious behaviours. This can be a difficult group to include because of the various ethical considerations involved in accessing a vulnerable population.

Another strength of this study relates to the novel findings about what may constitute protective for self-injury. These are under researched but the current study has offered suggestions for protective factors and also, importantly, treatment goals. Protective factors were seen be largely cognitive in nature. Without the inclusion of patients who have engaged in self-injurious behaviour these cognitions which may protect them from engaging in subsequent self-injury, may have remained largely unknown.

One limitation of the study is that self-report was used. It is possible that participants may have struggled to give open views about the behaviour of self-injury, especially if the topic generated emotions that they may want to inhibit, such as shame or guilt. Whilst completing the SORC interviews it is possible that inadvertent researcher bias could have influenced responses from participants.

A second limitation relates to the use of file information and incident reports to complete SORC forms. The information gathered about the incident may vary in quality and detail so that important pieces of information may be missed. There may also be bias from the reporter in terms of factors recorded particularly if literature which indicates that some staff perceive self-injury as 'manipulative' is considered. This has an impact upon what information is collected from a file review. However this limitation represents a real life occurrence in that the review of such incidents from a practical level, will only ever reflect the quality of information recorded. The interview component of the study may balance some of this limitation because the SORC guided discussion was open ended, so that participants could provide as much information as desired in their response to open ended prompts.

Finally there is a limitation regarding the generalisation made as a result of this research. The population of interest within the current study is very specific: in that it was sampled from one of only three high secure psychiatric hospitals in the country. It is possible that the results may not apply to other secure psychiatric facilities, or that male high secure patients share common features which are not transferable to other populations such as the much larger population of medium secure patients.

Issues for further research

The current study extended findings from study 2 and there was noteworthy overlap between functions, risk and protective factors and the various components of the Integrated Model of Self Injurious Activity. Self Determination Theory again appeared to hold promise for the further understanding of protective factors for self-injury. The Integrated Model of Self-Injurious Activity is depicted below with the findings from the current study indicated to show where there may be conceptual support. The figure indicates where the additions have come from based on the results of this study.

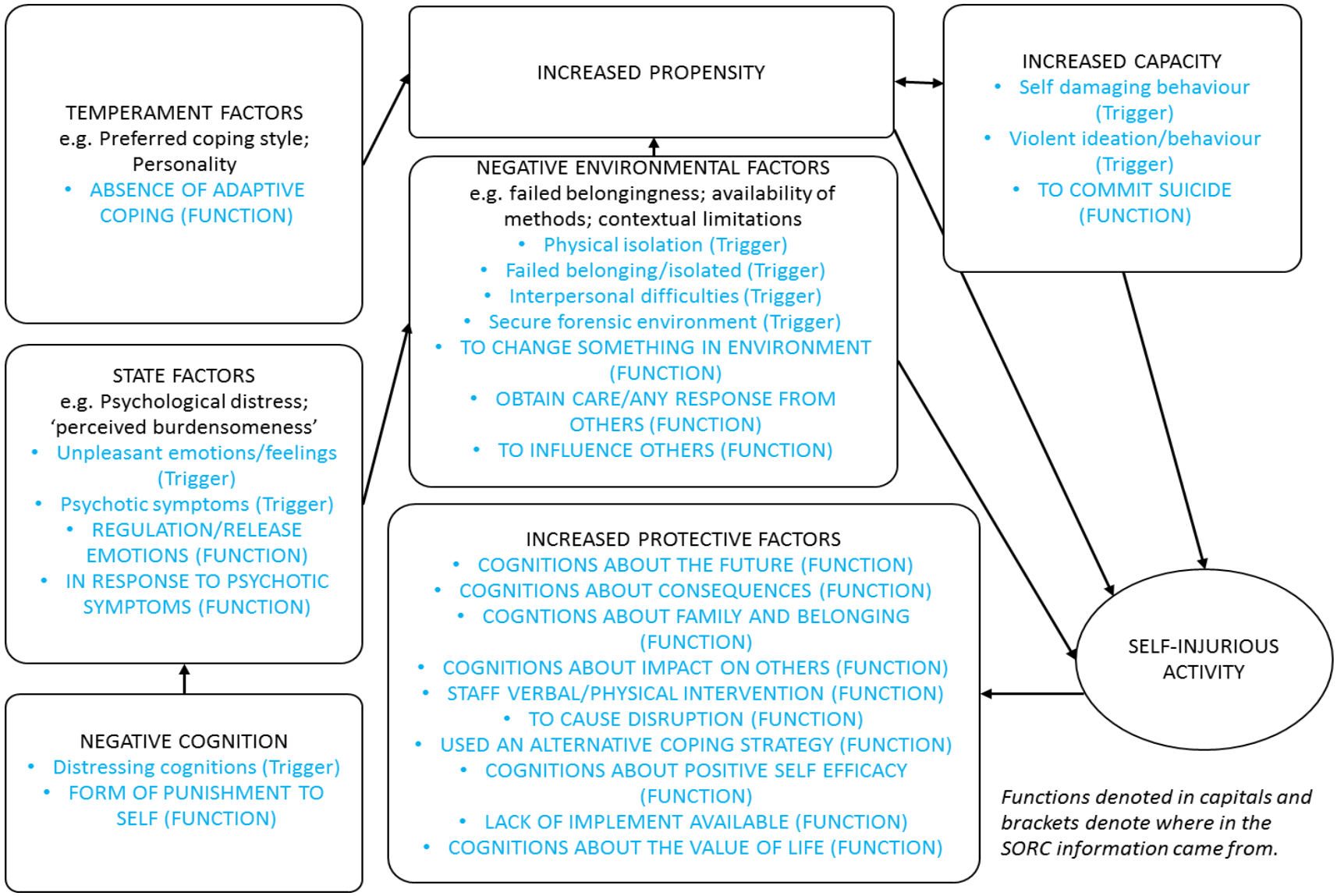

Figure 8.1: Integrated model of self-injurious activity (Ireland & York) including study 3 findings

Chapter 9

STUDY FOUR: Psychometric testing of components within the Integrated Model of Self-Injurious Activity.

Introduction to study four

The previous three studies within the PhD aimed to explore what factors may be important to consider in more detail within each component within the Integrated Model of Self Injurious Activity (Ireland & York, 2012). Initially it was hoped that study four would include testing of various components of the IMSIA in order to determine if it would distinguish between those who had a self-injury history and those who did not. Unfortunately, once initial sampling had occurred, it became apparent that the no self-injury group was very small. As such, one of the items taken from the Theory of Planned behaviour questions (generated in study one) was used as a continuous variable to determine the extent of past self-injury in order to conduct regression analysis. It was considered useful additionally to conduct t-tests comparing the no self-injury group with those who had a past history of self-injury on the variables of interest.

The variables of interest within study four were determined through a review of the literature and included factors found to have a robust relationship with self-injury, such as suicidal ideation (Palmer & Connelly, 2005) and impulsivity (Glenn & Klonsky, 2010). Other variables of interest were included due to limited research but emerging potential applicability such as coping style (Ireland & York, 2012), attitudes towards self-injury (O'Connor et al.,2006) and resilience (Hjemdal et al 2006) in terms of examining potential protective features.

There is a great deal of literature regarding suicidal ideation and behaviour and the link to self-injurious behaviour (Guan et al 2012). Literature highlights that previous fear inducing experiences can habituate individuals to pain and fear associated with further acts of self-injury or suicide. This is outlined as *capacity* in both the Interpersonal Psychological Theory of Suicidal Behaviour (Joiner, 2005) and the Integrated Model of Self-Injurious Activity (Ireland & York, 2012). In addition a measure of suicidal ideation was also considered important to include as one of the functions of self-injury identified

within study 3 had been *to commit suicide*. Although incidents of self-injury as opposed to suicide had been asked about, participants still reported suicidal experiences on occasion, demonstrating the potential close link or continuum of these behaviours from the perception of those engaging in them. The **hypothesis** associated with this element of the study was that an increased tendency for past self-injurious behaviour will be predicted by higher levels of suicidal ideation (Prinstein, 2008). Also when comparing those who have never self-injured to those who have self-injured, those in the latter group will have significantly higher levels of suicidal ideation as measured by the Beck Scale for Suicide ideation (BSS; Beck & Steer, 1991).

In respect of impulsivity, research has indicated its importance as a predictor of self-injurious activity. In relation to the current population of interest, Williams et al. (2015) found that when comparing a group of borderline personality disorder patients between 'high' and 'low' self-reported lethality those in the high lethality group were more likely to report impulsivity. As it is hoped that the Integrated Model of Self-Injurious Activity will be able eventually to distinguish between high risk and lower risk individuals in respect of self-injury, the inclusion of impulsivity seemed worthwhile. This was based on research which indicates that impulsivity may be a strong predictor for self-injury (Arens et al.,2012) and also specifically within a clinical population (Williams et al.,2015). In addition to this research, Joiner (2005) also suggested that those individuals who behave in a more impulsive manner are more likely to acquire capacity for self-injury because of the tendency to experience more risky situations. The **hypothesis** associated with this component of the study was that an increased tendency for past self-injurious behaviour will be predicted by increased impulsivity. Also when comparing those who have never self-injured to those who have self-injured, those in the latter group will have significantly increased impulsivity as measured by the Abbreviated Plutchik Impulsivity Scale (APIS; O'Connor, Rasmussen & Hawton, 2012).

Coping style was another factor to be explored within the current study. Literature has indicated an emerging role for coping style as a potential protective factor for self-injury (Williams & Hasking, 2010). Preferred coping style was included as a temperament factor within the Integrated Model of Self-Injurious Activity (Ireland & York, 2012), but

it is acknowledged that coping style could be a protective factor if the strategy fits the context, or a risk factor if the strategy is inappropriate to the context (Chapman, Gratz & Turner, 2013). One of the particular styles of coping identified relates to 'self-blame' and 'self-criticism' which has been linked to self-injury (Gilbert et al.,2010). The **hypothesis** associated with this component of the study is that an increased tendency for past self-injurious behaviour will be predicted by increased self-blaming as measured by the Brief COPE (Carver, 1997) 'self-blame' scale . Also, when comparing those who have never self-injured to those who have self-injured those who have self-injured will have significantly increased self-blaming.

An important social-environmental factor to be identified is that of attitudes. O'Connor (2011) has outlined the importance of motivational moderators such as attitudes within the Integrated Motivational-Volitional Model of Suicidal Behavior. O'Connor & Armitage (2003) and O'Connor Armitage & Grey (2006) focused upon the extent to which attitudinal factors based upon the Theory of Planned Behaviour (Ajzen, 1991) could predict self-injurious activity. Within this research, they also added additional components of moral norm and anticipated affect. Within study one the importance of this particular social environmental factor was the focus. Expert participants were used to suggest a set of questions based on the Theory of Planned Behaviour in order to ascertain the attitudes of those who were engaging in self-injurious behaviour. Within the current study, this would be the first time that these questions had been used to try and determine the attitudes of those engaging in self-injury. The **hypotheses** associated with this component with the study were;

1. An increased tendency for past self-injurious behaviour will be predicted by increased positive attitudes towards self-injury (O'Connor et al.,2003). Also, when comparing those who have never self-injured to those who have, those in the latter group will have significantly more positive attitudes towards self-injury.
2. An increased tendency for past self-injurious behaviour will be predicted by higher anticipated affect scores (O'Connor et al.,2006). Also when comparing those who have never self-injured to those who have self-injured, those in the latter group will have significantly higher anticipated affect scores.

Finally the remaining variable of interest to be examined within the current study is that of resilience. Within the Integrated Model of Self Injurious Activity (Ireland & York, 2012) protective factors were included, but with an acknowledgement about the specifics of what these factors may be was unclear. Kocalevent et al. (2015) contend that resilience factors are any empirically derived variables which statistically predict a resilient outcome. They explain that two elements are linked: the exposure to some form of adversity and a positive outcome higher than the expected range. Arguably forensic patients are exposed to a high range of adversity factors, but yet at points stop engaging in self-injurious behaviours which poses an interesting question as to why this occurs and highlights the basis for the impact of some form of resilience. Hjemdal, Fribourg, Stiles, Rosenvinge & Martinussen (2006) found that, when using the Resilience Scale for Adults (RSA), important protective factors could buffer the development of psychiatric symptoms. The **hypothesis** associated with this component of the study was that an increased tendency for past self-injurious behaviour will be predicted by lower levels of resilience as measured by the Resilience Scale for Adults (RSA; Friborg et al., 2003). Also when comparing those who have never self-injured to those who have self-injured, the latter group will have significantly lower levels of resilience.

The research question

In addition to the specific hypotheses outlined above, the study also aimed to address the research question of 'if any predictors are identified, where do these factors conceptually fit within the Integrated Model of Self-Injurious Activity (Ireland & York, 2012)?'

Participants

The participants were 80 adult men (mean age 38, range 23-65 years). All participants were patients in a high secure hospital. Each participant was given a number of self-report measures to complete.

Measures

All participants were asked to complete the following measures:

- ***Items based on the Theory of Planned Behaviour questions:*** These were the 18 questions generated by experts using the Delphi method in study 1. Each question

was written as a statement. Responses were given on a scale of 1-7. For example question 1 was '*injuring myself has been a common behaviour for me in the past*' and this was rated on a scale of 1 'agree' to 7 'disagree. See Appendix 23.

- ***Brief COPE (Carver, 1997):*** The COPE was developed to assess a broad range of coping responses. It includes responses that are assessed as dysfunctional and those considered functional, and is comprises of 28 self-report items. The Brief COPE provides the following scales; self-distraction, active coping, denial, substance use, use of emotional support, use of instrumental support, behavioural disengagement, venting, positive reframing, planning, humour, acceptance, religion and self-blame. This measure has been used in populations engaging in self-injury and in self-injurious behaviour within forensic settings (Tait, Brinkler, Moller & Grench, 2014; Riaz & Agha, 2012). See Appendix 24.
- ***SSQ-3 Social Support Questionnaire (Sarason, Levine, Basham et al.,1983):*** The social support questionnaire was designed to measure perceptions of social support and satisfaction with that social support. The three item version was used. This has been demonstrated to have good test-retest reliability (Sarason, Sarason, Shearin & Pierce, 1987) and its short length complemented the other measures included in the study. Participants were asked to think about the people within their social circle for example, '*who accepts you totally, including your worst and your best points'*. They are then asked to rate their satisfaction with the answers provided. See Appendix 25.
- ***Resilience Scale for Adults (RSA; Friborg et al., 2003);*** The RSA is a multidimensional scale designed to assess characteristics of resilience in adults. It comprises 33 self-report questions that account for five aspects of resilience (personal competence, social competence, family cohesion, social resources, and structured style). This measure has been previously used in a forensic psychiatric population (Meral et al.,2015). A copy of the measure can be seen in Appendix 26.
- ***Beck Scale for Suicide ideation (BSS; Beck & Steer, 1991);*** This scale is designed to examine suicidal intent within patients. It consists of 21 self-report items. Two of the items of the scale are designed to function as an internal screening component. This component eliminates the intrusiveness of the questionnaire for patients who are not suicidal. Each item is scored on a scale of 0, 1 or 2. Previous research has

indicated good reliability within a US psychiatric hospital population (Horon et al.,2012). See Appendix 27.

- ***Abbreviated Plutchik Impulsivity Scale (APIS; O'Connor, Rasmussen & Hawton, 2012, taken from Plutchik et al. 1989):*** This abbreviated scale includes the two following questions taken from the full Plutchik et al. (1989) impulsivity scale. The items are rated on a scale of zero to four: '*I do things on the spur of the moment'* and '*I do things impulsively'*. The two questions were used in the O'Connor et al. (2012) study with adolescents engaging in self-injurious behaviour and highlighted a link between the two. In addition the measure was short to administer. This was to compensate for other measures to try and help avoid fatigue of participants. See Appendix 28.

Procedure

Ethical approval for this study was gained from the local NHS research ethics committee together with approval also from the University of Central Lancashire.

Responsible Clinicians were provided with information sheets about the study (Appendix 30). They were asked to generate two lists of their patients; those who had history of self-injury and those who did not. Patients were randomly selected from each of these lists. They were only approached and invited to take part following consent being given by their Responsible Clinician (Appendix 29). If they were interested in taking part, patients were given at least a week to read the information relating to the study and the questionnaires involved (Appendix 30). When revisited, at least a week later, they were asked to provide written consent if they wanted to participate (Appendix 31). For those potential participants who were not interested, they were thanked for their time and no further contact in relation to the study was made. Once informed consent had been obtained, a time convenient to the participant to complete the measures was made. Again, nursing staff were made aware that patients had been answering questions regarding self-injury but no information about any specific responses were provided.

Results

The original intention was to compare men who had no history of engaging in self-injurious behaviour with those men who did. However of the sample of 80 men, only 13 had no history of self-injury meaning that the latter group was too small for statistical comparison. Therefore, question one of the items based on the Theory of Planned Behaviour was used as a continuous variable to determine the *extent* of previous self-injurious behaviour; i.e. '*injuring myself has been a common behaviour for me in the past'*, and was rated on a scale of 1-7. This variable was used in order to conduct regression analysis with various predictors. However, analysis was also carried out upon the group with no history of self-injury and those with a history of self-injury whilst acknowledging the limitations of the small sample size of the first group.

Data Screening

The data was checked for accuracy. Eighty participants completed the measures. There were no missing values for the three descriptive questions (i.e. 'how many of those who are close to you have attempted suicide'). There were no missing values for AESIQ. The COPE had one data point coded as missing (participant 81). The SSQ had one piece of missing data for each of the six questions. This missing data was all from one participant (participant 106). The APIS had one piece of missing data (participant 106). The BSS had no missing data. Six participants on the RSA had missed an item.

Participant 106 had not completed any of the SSQ, a question of the APIS (which only contains two items) and eight items of the RSA. Consequently participant 106 was taken out of the analysis. There appeared to be a pattern in the RSA for participants 74, 75 and 37 who had missed questions relating to family. These missing values were replaced with the variable mean (Tabachnick & Fidell, 2001).

For the remaining missing values that appeared more random in nature; the COPE (participant 81) and RSA (participants 108 and 26) a dummy variable was created. Independent t-tests were conducted using the independent variables of age and history of self-injury. There were no significant differences indicating that the missing data was

likely to be random so the missing variables were replaced with the variable mean (Tabachnick & Fidel, 2001).

Outliers: Three cases were observed to have a Mahalanobis distance of over 25 which were cases 18, 43 and 79. These cases were removed from the data set. All three cases had a diagnosis of Paranoid Schizophrenia and a history of self-injurious behaviour. Their ages were 29, 36 and 47 respectively. Following the deletion of these cases box plots were completed on the same measures and some outliers still remained. On the basis that these cases had not been identified as having a serious effect on the data set through Mahalanobis distance, and as they formed part of the population of study, the scores were changed so that although they would still be deviant, their impact would be reduced. Each case was assigned a new score or unit smaller (or larger) that the next most extreme score.

Data Analysis

The mean tables for this element of the analysis are shown in Appendix 32. It was predicted there would be an increased tendency for past self-injurious behaviour indicated by, 1) increased impulsivity, 2) increased self-blaming coping, 3) increased positive attitudes towards self-injurious behaviour, 4) higher anticipated affect scores and 5) increased suicidal ideation. Before regressions were undertaken, Pearson's Product Moment Correlations were carried out on the variables of interest to be entered into the regression equations; these are found in Appendix 33. All the regressions used the forced entry method. This method is suggested when theory is used to choose predictors but the researcher makes no decision about the order in which the variables are entered into the model (Field, 2012). In terms of the appropriate sample size in line with the number of predictors Field (2012) explains there are no 'hard and fast' rules. However it is suggested that when discussing the complex subject of sample size in regression that with six or fewer predictors a suggested sample size of 100 will always suffice (Field, 2012). The initial sample size was 80 participants, with 5 suggested predictors. Therefore, the sample size just about matches with predictors as suggested by Field (2012) but this will be indicated as a potential limitation also.

Linear multiple regression and simple linear regressions were used to examine which predictor variables best predicted an increased past tendency for self-injurious behaviour. The regressions were based upon the predictions of the study. The multiple regression was carried out with all hypothesised variables below with the exception of the Theory of Planned Behaviour question total. This was because the anticipated affect total was already included and there would be correlation as they were derived from the same scale. A simple linear regression was carried out on the Theory of Planned Behaviour question total. The dependent variable for all regressions was question one of items based on the Theory of Planned Behaviour, 'Injuring myself has been a common behaviour for me in the past'. The independent variables were as follows in regressions based upon predictions;

- BSS total score
- APIS Impulsivity score
- COPE self-blame subscale
- Items based on the Theory of Planned Behaviour anticipated affect total
- Items based on the Theory of Planned Behaviour question total
- RSA total score

Is increased past tendency for self-injurious behaviour predicted by increased positive attitudes towards self-injurious behaviour (TBP total)

A simple linear regression was calculated to predict past tendency to engage in self-injurious behaviour based on positive attitudes towards self-injury (TBP total). A significant regression equation was found ($F(1, 74) = 41.78$, $p = .000$, $R^2 = .36$, $R^2_{Adjusted} = .35$). Therefore the model can account for 35% of the variance in increased past tendency for self-injurious behaviour.

Is increased past tendency for self-injurious behaviour predicted by BSS total score, APIS impulsivity, COPE self-blame, anticipated affect total and RSA total score?

A multiple regression was carried out to predict past tendency to engage in self-injurious behaviour based on the five predictors entered into the model. A significant regression equation was found $F(5, 70) = 11.20$, $p = .000$, $R^2 = .45$, $R^2_{Adjusted} = .41$). Therefore the model can account for 41% of the variance in increased past tendency for self-injurious

behaviour. The analysis shows that TBP Anticipated Affect was the only significant predictor of increased past tendency for self-injurious behaviour ($\beta = .57$, $t = 4.79$, $p = .000$) with higher anticipated affect scores predicting an increased past tendency for self-injurious behaviour. The model information is depicted in Table 9.1 below.

Table 9.1: Linear model of predictors of past tendency for self-injurious behaviour

	b	**SE B**	**β**	**t**	**Sig.**
(Constant)	.391	1.830		.214	.832
BSS total	.157	.599	.027	.262	.794
RSA total	.004	.013	.034	.319	.751
APIS total	.191	.141	.148	1.355	.180
COPE self-blame total	.034	.112	.029	.308	.759
Anticipated affect total	.160	.033	.568	4.785	.000

Following regressions which focused upon predictions, exploratory regressions were also completed on the subjective norms total, perceived behavioural control total and intention total of the theory of planned behaviour questions. These regressions were carried out alongside predictions, in order to manage the high number of predictors to ensure there were not too many predictors in a model causing results to distort. Again, these regressions used question one of the items based on the Theory of Planned Behaviour as the dependent variable.

Is increased past tendency for self-injurious behaviour predicted by increased intention total to engage in self-injurious behaviour

A simple linear regression was calculated to predict past tendency to engage in self-injurious behaviour based on increased intention total to engage in self-injurious behaviour. A significant regression equation was found ($F (1, 74) = 9.36$, $p = .003$, $R^2 = .112$, $R^2_{Adjusted} = .10$). Therefore the model can account for 10% of the variance in increased past tendency to engage in self-injurious behaviour.

Is increased past tendency for self-injurious behaviour predicted by increased perceived behavioural control towards self-injurious behaviour

A simple linear regression was calculated to predict past tendency to engage in self-injurious behaviour based on increased perceived behavioural control towards self-injurious behaviour. A significant regression equation was found (F (1, 74) = 9.49, p = .003, R^2 = .11, $R^2_{Adjusted}$ = .10). Therefore the model can account for 10% of the variance in increased past tendency to engage in self-injurious behaviour.

Is increased past tendency for self-injurious behaviour predicted by more favourable subjective norms towards self-injury

A simple linear regression was calculated to predict past tendency to engage in self-injurious behaviour based on more favourable subjective norms towards self-injurious behaviour. No significant regression equation was found (F (1, 74) = 2.67, ns).

Comparing the 'no self-injury' group to the 'self-injury' group

As discussed the initial intention of the research was to compare a group who had never self-injured with a group who had a history of self-injury. However, out of the 80 participants, only 13 had no history of self-injurious behaviour, meaning the latter sample was too small to use within regression analysis. However, it was still considered useful to compare the two groups using independent t-tests on the main variables of interest. The no self-injury group comprised of 13 participants, whilst the self-injury group comprised of 63 participants following the previous removal of outliers in the data screening process.

1. BSS Total: On average those who had a history of self-injury (M = 1.97, SD = 4.57) scored more highly on the BSS total than those with no history of self-injury (M = .77, SD = 2.05). This difference was not significant *t*(74) = .942, p = .36).
2. APIS Impulsivity total: On average those who had a history of self-injury (M = 4.62, SD = 1.83) scored more highly on the APIS total than those with no history of self-injury (M = 3.08, SD = 1.71). This difference was significant *t*(74) = 2.80, p = .007.
3. COPE self-blame scale: On average those with a history of self-injury (M = 4.70, SD = 2.02) scored more highly on the self-blame COPE scale than those with no history of self-injury. This difference was not significant *t*(74) = .256, p = .799.

4. RSA total: On average those with a history of self-injury (M = 113.68, SD = 20.02) scored lower on the total resilience scale than those with no history of self-injury (M = 121.00, SD = 22.05). This difference was not significant $t(74) = -1.180$, $p = .242$.
5. Anticipated affect total: On average those with a history of self-injury (M = 14.33, SD = 8.67) scored more highly on the anticipated affect total than those with no history of self-injury (M = 5.00, SD = 2.04). This difference was significant $t(72.68) = 7.59$, $p = .000$.
6. Positive attitudes (TPB questions) total: On average those with a history of self-injury (M = 31.41, SD = 13.96) scored more highly on the total positive attitudes towards self-injury than those with no history of self-injury (M = 18.23, SD = 5.33). This difference was significant $t(50.48) = 5.74$, $p = .000$.
7. Intention total: On average those with a history of self-injury (M = 5.02, SD = 3.42) scored more highly on the intention total than those with no history of self-injury (M = 3.46, SD = 1.13). This difference was significant $t(59.51) = 2.91$, $p = .005$.
8. Perceived behavioural control total: On average those with a history of self-injury (M = 9.22, SD = 3.45) scored more highly on perceived behavioural control total than those with no history of self-injury (M = 7.85, SD = 3.21). This difference was not significant $t(74) = 1.32$, $p = .190$.
9. Subjective norms total: On average those with a history of self-injury (M = 2.84, SD = 2.04) scored more highly on the subjective norms total than those with no history of self-injury (M = 1.92, SD = 1.80). This difference was not significant $t(74) = 1.50$, $p = .137$.

Discussion

The overall research question for this study was 'if any predictors are identified, where do these factors conceptually fit within the Integrated Model of Self-Injurious Activity (Ireland & York, 2012)? The specific hypotheses were 1) an increased tendency for past self-injurious behaviour will be predicted by higher levels of suicidal ideation (Prinstein, 2008). Also when comparing those who have never self-injured to those who have self-injured, those in the latter group will have significantly higher levels of suicidal ideation as measured by the Beck Scale for Suicide ideation (BSS; Beck & Steer, 1991). **This hypothesis was not supported**. 2) An increased tendency for past self-injurious behaviour will be predicted by increased impulsivity. Also when comparing those who have never self-injured to those who have self-injured, those in the latter group will have significantly increased impulsivity as measured by the Abbreviated Plutchik Impulsivity Scale (APIS; O'Connor, Rasmussen & Hawton, 2012). **The regression analysis did not identify impulsivity as a significant predictor. However those with a history of self-injury were significantly more impulsive than those with no history**. 3) An increased tendency for past self-injurious behaviour will be predicted by increased self-blaming as measured by the Brief COPE (Carver, 1997) 'self-blame' scale. Also, when comparing those who have never self-injured to those who have self-injured those who have self-injured will have significantly increased self-blaming. **This hypothesis was not significant.** 4) An increased tendency for past self-injurious behaviour will be predicted by increased positive attitudes towards self-injury (O'Connor et al.,2003). Also, when comparing those who have never self-injured to those who have, those in the latter group will have significantly more positive attitudes towards self-injury. **This hypothesis was fully supported**. 5) An increased tendency for past self-injurious behaviour will be predicted by higher anticipated affect scores (O'Connor et al.,2006). Also when comparing those who have never self-injured to those who have self-injured, those in the latter group will have significantly higher anticipated affect scores. **This hypothesis was fully supported**. 6) An increased tendency for past self-injurious behaviour will be predicted by lower levels of resilience as measured by the Resilience Scale for Adults (RSA; Friborg et al., 2003). Also when comparing those who have never self-injured to those who have self-injured, the latter group will have significantly lower levels of resilience. **This hypothesis was not supported.** The discussion now focuses upon the

implications of the results in line with theory and in relation to the Integrated Model of Self Injurious Activity. See Figure 9.1 which shows additions to the model from the results of the current study.

Initially the aims of this study were to compare a group of patients who had a history of engaging in self-injury with a group of patients who had no history of engaging in self-injury taken both from a high secure setting. However, as the participants were being recruited, it became apparent that the group of those with no history of self-injury would not be large enough to make statistically robust comparisons. Of the 80 participants recruited, only 13 had no history of self-injury. This represents 84% who have a history of self-injury. In a medium secure sample of 88 patients Leggett & Beech (1999) found that 45.5% had engaged in self-injurious behaviour. Daffern & Howells (2009) found that, in a high secure setting, when examining all admissions between set time periods, 50% of patients had self-injured at some point. However it is possible that there was some form of sampling bias, because patients who had no history of self-injury may have felt that they were unable to contribute to research about self-injury or may not have wanted to participate for other reasons. Nevertheless this finding from the current study indicates the very high prevalence rates for self-injury amongst forensic patients and the importance of research into identifying and preventing this behaviour. It was still considered important to compare the group of 13 with no history of self-injury to the group who had self-injured; therefore, two lots of statistical comparisons were carried out taking into account appropriate analyses.

One area which was considered which may have linked to *negative cognition* was the factor or suicidal ideation. Previous research suggested that self-injurious behaviour and suicidal cognition may be linked (Palmer & Connelly, 2005). This study indicated that prisoners who had previously engaged in self-injury had significantly higher scores on the BSS, which was suggested to indicate a link between the two. Also Klonsky et al. (2012) identified that self-injury and suicidal ideation were the only significant two predictors of attempted suicide. However the results of the current study did not indicate support for these findings. There were no significant differences found regarding self-injurious behaviour and suicidal ideation being experienced between the groups compared. It is

possible that at the time of data collection, the participants were asked about current suicidal ideation which they may not have been experiencing at that particular point in time. Additionally, the participants may have underreported suicidal ideation considering that answering questions about the topic may have had implications for them regarding how they were managed within a hospital setting (for example, increased observation levels). Out of the sample of 80, 67 had engaged in self injurious behaviour of some description, which many reported in the current study to have negatively affected their environment in terms of restrictions. It is possible that participants considered this when responding to this particular questionnaire. Finally, an alternative explanation is that the study is focusing upon self-injurious behaviour rather than suicidal behaviour. Although it is acknowledged that the behaviours are linked, it is possible that one does not lead to the others. Anecdotally, patients can be very clear in their reports that they intended to injure themselves, but did not intend to commit suicide for example. Previous research has indicated the link between suicidal ideation and attempted suicide (Klonsky et al.,2012) and also self-injury and suicidal ideation maintained significant associations with attempted suicide, but this does not necessarily mean that suicidal ideation influences self-injurious behaviour. The importance of self-injury as a risk for suicide has been well established (Guan et al.,2012) however the impact of suicidal behaviours and ideation on subsequent self-injury appears less clear.

In the Integrated Model of Self Injurious Activity impulsivity is suggested as a *temperament* factor. One prediction of the study was that a past increased tendency for self-injurious behaviour would be predicted by increased impulsivity, this was not supported by the multiple regression analysis. However there was a significant difference observed between the group who had never self-injured and the group who had self-injured, with the latter group scoring as significantly more impulsive than the group who had never self-injured. This mirrors the previous findings regarding impulsivity and self-injury in that findings have been described as mixed (Glenn & Klonsky, 2010). Joiner (2005) had suggested that impulsivity specifically was important in considering that individuals who were more impulsive would be more likely to acquire capacity for self-injurious behaviour. The current result is interesting and important when considering that impulsivity was based on an abbreviated scale which used two items. This was used to

try and accommodate fatigue experienced by participants when completing the other measures. However, potentially a longer measure such as the UPPS Impulsive Behaviour Scale may have provided clearer, more robust results. Given the mixed results from the current study within the Integrated Model of Self Injurious Activity, it is tentatively proposed that impulsivity is a considered a temperament factor contributing to increased propensity and increased capacity in turn. This is however, a component which requires further testing for clarity, but potentially with the use of a more comprehensive impulsivity scale.

Another proposed element of *temperament* is coping style. The current study aimed to test a specific self-blaming coping style based on the research by Gilbert et al. (2010) proposing that it would predict increased tendency for previous self-injurious behaviour. However the results indicated that self-blaming coping did not do this. The results did however indicate that the planning subscale of the COPE did significantly predict previous tendency for self-injury. It is possible that if individuals believe that their affect will be regulated following self-injury (which the current results indicated to be the case and which will be discussed further) then more planning may occur in order to achieve the anticipated affect. One possible explanation for the unexpected results in line with the initial prediction is the appropriateness of the coping strategy to the context. Research by Ireland and York (2012) indicated that emotion focused coping was an adaptive method of coping for women thinking about suicide within a prison setting. It is possible that, within a forensic context, a self-blame coping strategy may be adaptive. If someone has committed a serious offence or engaged in risky behaviours which have affected others, self-blame may actually contribute to taking responsibility. It is likely that all coping strategies may be useful in a certain context. A future area of investigation into coping strategy might consider how people select a strategy that is appropriate to the context. It may be that those patients or prisoners who do rehabilitate from self-injurious behaviours whilst in secure settings have been able to select appropriate adaptive coping strategies in a given context. One important element of context may be the social environment.

The components of temperament factors, state factors and negative environmental factors all feed into the next component of the Integrated Model of Self Injurious Activity, that of

propensity. The current study included analysis of attitudes towards self-injurious behaviour using the Theory of Planned Behaviour as a basis. It is argued that the term *propensity* is similar to that of *intention*. Behavioural intention is theorised to be the most important predictor of whether an individual engages in behaviour and is predicted by attitudes, subjective norms and perceived behavioural control (Ajzen, 1991). The current study found that an increased tendency for previous self-injurious behaviour was predicted by increased positive attitudes towards self-injury, higher anticipated affect, increased perceived behavioural control and increased intention towards self-injury. It is important to note that these findings were replicated in both types of analyses undertaken within the study, within the regression analyses and also within the comparison between the group who had not self-injured and those who had.

The finding that overall positive attitudes are a significant predictor of self-injurious behaviour is a central one. All the participants had a history of engaging in self-injurious behaviour, therefore their risk of repeated behaviour is raised. The questions generated by experts in study one, used here to ascertain positive attitudes towards self-injury, appear able to contribute to the prediction of those who have an increased tendency for engaging in self-injurious behaviour. This is useful, as other risk factors within the Integrated Model of Self Injurious Activity may be present for an individual but asking these questions could contribute to an understanding of whether the *propensity* for engaging in the behaviour is also present. This may allow professionals to discriminate in relation to the allocation of resources or specific intervention.

The questions specifically asking about anticipated affect also predicted previous tendency to engage in self-injurious behaviour. The anticipated affect concept was included based on the work of O'Connor & Armitage (2003) in which they included both anticipated affect and moral norm along with the other standard components of the TPB. Within that study moral norm added to the variance associated with intention to self-injure but, anticipated affect did not. In the current study anticipated affect was a significant predictor of previous tendency to engage in self-injurious behaviour. With regard to the Integrated Model of Self Injurious Activity, if *state factors* such as psychological distress are in action and an individual perceives that following self-injury

this will have a certain desired effect on their affective experiences, this adds to *propensity* which contributes to increased *capacity*. If an individual anticipates that their negative emotions may be reduced by engaging self-injury, and this is the outcome, then self-injury is reinforced. This may contribute to the anticipated affect and propensity for the next incident of self-injury if other components of the model are relevant.

The study also found that both increased perceived behavioural control over self-injury and increased intention to engage in self-injury were significantly higher in those who either had an increased past tendency to engage in self injury, or were within the self-injury group. With regard to intention, Ajzen (1991) had proposed that the most important predictor of whether or not an individual engages in behaviour is their behavioural intentions. Within the current study, it has been identified that intention was a significant predictor of either increased past tendency for engaging in self-injurious behaviour or being within a group which had engaged in self-injury. The Theory of Planned Behaviour proposes that intention is comprised of attitude, subjective norms and perceived behavioural control. Both attitudes and perceived behavioural control were also significant predictors within the current study (although perceived behavioural control was not significantly different between the self-injury and no self-injury analysis). These findings support the findings of the O'Connor & Armitage (2003) study which was carried out within a patient group, albeit in a much smaller non-forensic sample. The only difference relates to the lack of predictive power found in the current study relating to subjective norms, in that subjective norms did not predict any significant differences between groups.

The findings that anticipated affect, perceived behavioural control, intention and overall positive attitudes act as predictors for previous tendency to engage in self-injurious behaviour are novel. They support Lewis et al. (2011) who asserted that self-injury may be better predicted by attitudes within forensic settings because other factors, such diagnoses, are found at such increased rates that no differences in risk for self-injury can be distinguished.

Investigation also aimed to determine whether lower levels of resilience would predict an increased tendency for past self-injurious behaviour. The results indicated that resilience was not a significant predictor and did not significantly distinguish between the no self-injury group and the self-injury group. Research had indicated that resilience may act as a buffer for various psychiatric symptoms (Hjedmal et al. 2006), however within the current study the difference may be that the participants already have psychiatric symptoms, indeed they all had a diagnosed mental disorder. Resilience was included within the study as a potential component for acting in a protective mechanism. However, it may be pertinent to recall that the sample was from a high secure forensic population. These people form a very small group within the UK who require the most intensive supervision and treatment. It is possible, that such individuals may need more specific protective factors than more general resilience for example. Kocalevent et al (2015) explained that resilience factors are anything which involves exposure to some form of adversity and a positive outcome higher than the expected range. If this explanation is considered within the context of the current study, the participants have arguably all been exposed to a range of adversity factors, so potentially resilience would need to be very strong to counteract this potential range of adversity factors. Resilience may still play an important role in counteracting self-injurious behaviour, particularly in those who may have no pre-existing psychiatric conditions for example, which is a worthwhile area for further study.

Strengths and limitations of the study

A major strength of the current study was the large sample size. This is a highly specific population group. A sample of 80 patients from a total high secure population of 795 across the three high secure hospitals in England and Wales represents a sample of 10% of this entire population. Psychiatric patients are difficult to access because of the necessary ethical and procedural considerations in place to protect them. However in order to understand self-injurious behaviour which can be severe, repeated and lethal within this population, research asking such individuals about their experience is of importance. The large sample also contributed to the development of the Integrated Model of Self Injurious Activity which in studies 1 and 2 had been based on relatively

small participant numbers. Study 3 and this study were based on much larger samples meaning that the results are likely to be more representative of the population of interest.

Self-report measures can be subject to bias. It is possible that participants did not feel able to answer honestly for a number of reasons such as negative emotions relating to the topic being studied, wanting to provide socially desirable responses or simply being unable to provide an accurate response to a question. Some may lack introspective ability and view themselves in a completely different light to others around them. Self-report measures also rely on the participants understanding them. Finally the self-report psychometrics all used rating scales which individuals may interpret differently. Some participants may respond on the extreme ends of scales whilst others respond in the midpoint. These are features relevant to most self-report measures and including the current study. However the other studies within the thesis have used different methods of data collection to try and eliminate some of these problems and contribute to the development of the Integrated Model of Self Injurious Activity.

The Theory of Planned Behaviour questions from study 1were used and a score obtained to indicate positive attitude towards self-injurious behaviour. Whilst this score appeared to work well as a predictor for previous tendency to engage in self-injurious behaviour, one limitation was the questions being used with individuals who had no history of self-injury. The way the questions were written effectively 'forced' individuals to endorse one end of the scale for some questions when 'not applicable' would have been more appropriate. For example 'what is the strength of your intention to injure yourself in the next week' on a scale of 1-7 when in actual fact, if you had never engaged in this behaviour a more likely response may be 'no intention' or 'not applicable'. This would be important to amend if these questions were to be used in the future.

The population of interest within the current study is very specific, as it was sampled from one of only three high secure psychiatric hospitals in the country. It is possible that the results obtained may not be applicable to other secure psychiatric features or that male high secure patients share features which are not common to other larger populations such as medium secure patients or low secure patients.

Finally, the sample size may have been pushing limits in terms of appropriateness for regression analysis and the number of predictors included. Field (2012) explained that there were no 'hard and fast' rules. However Field also goes onto suggest that in regression with six or fewer predictors a suggested sample size of 100 will always suffice. The initial sample size was 80 participants with 5 predictors. Following data screening the sample size reduced to 76 which is slightly smaller once again. In order to acknowledge some of these limitations, independent t-tests were also carried out as an alternative analysis in comparing those who had no history of self-injury and those who had engaged in self-injurious behaviour previously.

Issues for further research

One potential area for further research relates to the questions used to explore positive attitudes towards self-injury. These were generated based on expert opinion from study 1. If these questions were to be used in the future to understand attitudes of those who may engage in self-injury some modifications and further testing need to be undertaken. As highlighted above the questions should allow people to indicate 'not applicable'. Further research could also be carried out to ascertain whether the questions identified still measure the various components of the Theory of Planned Behaviour upon which they were initially based. In the current study the questions proposed about anticipated affect added together to provide a total which appeared to predict previous tendency to engage in self-injurious behaviour. Further testing could include factor analysis and examining the construct validity of such a group of questions in order to understand whether they form a helpful measurement of attitudes to engage in self-injurious behaviour.

The results relating to impulsivity appeared to be mixed. It is suggested that one likely reason related to the very short measure used within the current study. Potentially the inclusion of a more comprehensive measure, such as the Urgency scale of the UPPS which has demonstrated use when applied to self-injury (Williams et al.,2015) may lead to clearer results regarding impulsivity as a risk factor for self-injury. It may also clarify the role of impulsivity within the Integrated Model of Self Injurious Activity.

It would also be helpful to continue exploring the various components of the Integrated Model of Self Injurious Activity. This study was the first one of the four PhD studies to use psychometrics to explore some of the predicted components of interest. This could be expanded to provide further understanding within a medium or low secure environment. Future testing of the model as a whole may help discriminate between types of intervention or risk management that may be necessary to support an individual and would increase understanding.

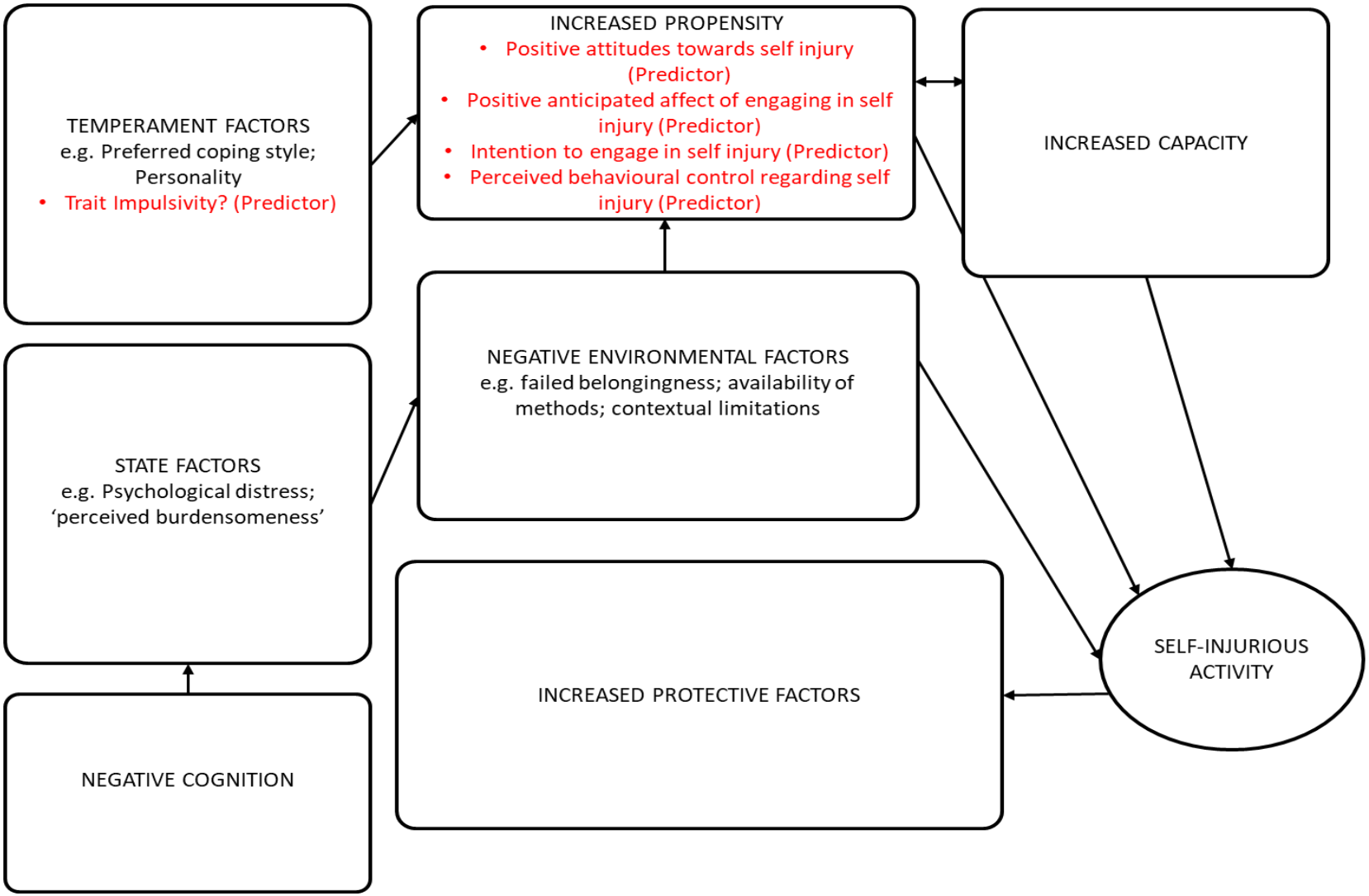

Figure 9.1: Integrated model of self-injurious activity (Ireland & York) including study 4 findings

Chapter 10

GENERAL DISCUSSION

Research questions and hypotheses

The research question for study 1 was what questions will experts in self-injury generate when given basic prompts about the components of the Theory of Planned Behaviour? The results showed that experts agreed on 18 questions, of which 11 related to components of the Theory of Planned Behaviour. These questions were then used within the analysis carried out within study 4 of the PhD.

The research questions for study 2 related to identifying what functions, risk and protective factors would be identified by individuals engaging in or caring for self-injurious behaviour within secure settings? This information was gathered using functional assessments and analysed using thematic analysis. Risk factors were identified from the organism, trigger and consequence elements of the functional assessments. Protective elements were identified from an incident whereby risk was raised but self-injurious behaviour was not engaged in. Finally functional information was gained through looking at the motivation for both situations where self-injury had been engaged in and also when risk was raised. A final research question related to where these risk, protective and function factors may conceptually fit within the Integrated Model of Self Injurious Activity. Suggestions were made within the discussion of study 2 about the fact that there appeared to be important overlap with the model throughout. Study two also tested a hypothesis that of protective factors identified they would include the three components of Self Determination Theory. It was found that this hypothesis was supported. Finally there was a hypothesis that there would be significant differences between the perceptions of staff and patients regarding function, risk and protective factors for self-injury. This hypothesis was partly supported, as some differences were observed but other expected differences were not observed. Study 2 had a small sample size; therefore, study 3 was a replication of this but with a much larger sample size. This was done because the research is exploratory and the richness of the data from study 2 indicated that replication in a much larger sample would be valuable.

Therefore, study 3 had the same research questions and hypotheses as study 2. Risk, protective and function information was identified which was beyond what was identified within study 2 and again there appeared to be overlap with the Integrated Model of Self Injurious Activity. Of the protective factors identified there was overlap with Self Determination Theory components which supported that particular hypothesis. Finally in relation to differences between staff and patients in their perceptions of self-injury and situations whereby there was increased risk, this hypothesis was supported. Significant differences between staff and patients were observed within risk, protective and function factors.

Finally within study 4 psychometric testing was undertaken of factors considered to be important in potentially predicting self-injurious behaviour based on previous literature. The research question related to where any identified predictors may conceptually fit within the Integrated Model of Self Injurious Activity. Of the predictors identified, suggestions of where they may fit were made. In terms of hypotheses for this study, it was postulated that an increased tendency for past self-injurious behaviour would be predicted by 1) increased positive attitudes towards self-injury, 2) higher anticipated affect scores, 3) increased impulsivity, 4) increased self-blaming, 5) lower levels of resilience and 6) higher levels of suicidal ideation. The results indicated support for hypotheses 1 and 2 but not 3, 4, 5, or 6.

Novel Findings Overall

The overall findings of the research will be discussed in more detail throughout, however, a summary of the novel findings of the PhD research is provided here for clarity. Within study 3 one of the novel findings related to the identification of a function of self-injurious behaviour being in response to psychotic symptoms. Participants indicated that they had engaged in self-injury 'to get rid of the voices' and 'the voices were getting too much so he self-harmed'. This is a function of self-injurious behaviour which has not previously been identified within the literature. Self-injury in response to hallucinations represents a specific intervention point for supporting those who are experiencing such symptoms of mental disorder. It is possible that the self-injury in response to hallucinations also serves an additional function such as changing various affective states

e.g. reducing distress or increasing calm, however the primary function appears to be in response to the hallucinations experienced. This is an important finding in the context of understanding self-injurious behaviour within forensic and mental health contexts.

Another novel finding relates to the results from study 2 and 3 which indicated a role for mixed motivations in relation to a single incident of self-injury. A number of participants indicated that a single incident of self-injury occurred for more than one reason. This is very important in terms of the consideration of where an intervention may be targeted. It would be important to determine any functions of self-injurious behaviour in order to develop more effective means of meeting these particular needs. If a motivation is missed because one has already been identified and moderated, it could mean that self-injurious behaviour continues through another motivation factor. For this reason, the functions identified within the PhD were mapped onto the Integrated Model of Self Injurious Activity in order to highlight the potential motivations for professionals to consider.

Within studies 2 and 3 the results indicated that an increase in positive emotions and an increase in negative emotions were both consequences observed after self-injurious behaviour had occurred. For some participants these consequences were recorded for the same instance of self-injurious behaviour. The increase in positive emotions endorses previous research about self-injury generating positive emotion or thought (Nock, 2009) but not the finding that negative emotion may increase. Nock's (2009) other function relating to emotions was that self-injury would remove a difficult emotion, not generate one. This new finding may explain the mechanism by which self-injury becomes a repeated behaviour as the next incident of self-injury may be in an attempt to regenerate positive emotions and remove negative emotions.

Another important finding related to the differences between staff and patients in their attributions for why individuals engage in self-injurious behaviour or choose an alternative behaviour at a time of raised risk. In both studies 2 and 3 patients endorsed a consequence of *increased negative emotions* significantly more than staff did. Staff endorsed that consequences such a reduction in negative emotions or an increase in

positive emotions, but not that negative emotions may increase following self-injury. This may represent the perception of 'why do it, if it leads to negative consequences' however, this is similar to many other health related behaviours such as drinking alcohol. In situations whereby patients may have been at increased risk but did not injure themselves, staff in both studies endorsed the consequence of *staff support given* at significantly higher rates than patients. This was interesting in the context that staff considered their actions may help reduce risk, but they did not consider that staff actions may actually contribute to risk in the context of a trigger within the social environment for example. Interestingly patients endorsed that positive cognitions of varying types tended to be the consequences following an incident whereby they had been at raised risk. In terms of differences in functions for self-injury, in both studies patients significantly endorsed the function of *regulation or release of emotions* more frequently than staff. Within study 3 a noteworthy difference was that staff endorsed the function of *to influence others* at a significantly higher frequency than patients. This finding begins to echo previous research which suggests that healthcare staff may hold attitudes that are negative in nature regarding those engaging in self-injury.

Limited information was known about the protective factors for self-injury. It was considered important to try and determine why an individual who may have a number of risk factors for self-injury present does not hurt themselves on a given occasion. The Integrated Model of Self Injurious Activity (Ireland & York, 2012) acknowledged this as an area for future research. The current research has indicated that a number of the protective factors identified by patients who have engaged in self-injury are cognitive in nature. They also appear to be cognitions which may counteract the established risk factor cognitions, for example *cognitions about family and belonging* may counteract the well-established negative cognition of *failed belongingness*. The importance of these findings is not only in establishing what may constitute a protective factor, but that these factors appear to be overwhelmingly dynamic in nature. That is, they are areas in which clinicians may be able to intervene and design appropriate treatment interventions with the aim of supporting change for individuals who engage in self-injury as a behaviour.

A further novel finding was that attitudes appear to be important in understanding increased risk within a forensic population. Study 1 used the theory of planned behaviour to prompt experts to suggest questions based on these components. Eighteen questions were suggested overall, but only 11 were related to the theory of planned behaviour. Within study 4 these questions were used to ascertain attitudes and it was determined that positive attitudes, anticipated affect, intention and perceived behavioural control could all be predictors of past tendency to engage in self-injurious behaviour. This is important considering that this information could be gained from only 11 newly formed questions. These particular findings also contributed to further expansion of factors to consider within the propensity element of the Integrated Model of Self Injurious Activity.

Finally, a novel element of this research related to the fact that it was self-injury carried out by men being studied. The overwhelming majority of research into self-injury has been carried out within female populations, however as outlined by Green & Jackupcak (2015) men who do self-injure do so more severely than women. Also, men who self-injure are more likely to die by suicide (Karasouli et al.,2015). These authors highlighted that qualitative research asking men about the ways in which they hurt themselves and some of the reasons would increase understanding in the area. The current research carried out both of these particular suggestions. The current research also did this within a sample which amounted to approximately 10% of the high secure population, allowing for a good degree of generalisation to this high risk population.

Risk factors for self-injury

Previous research into risk factors for self-injury heavily focused upon historical risk factors (e.g. childhood sexual abuse; Santa Mina & Gallop, 1998). This research indicates that integration of historical risk factors and exploration of dynamic risk factors for self-injury generates information that extends current thinking. These dynamic factors appeared to be based on psychological, cognitive and social factors. The results from the current research have contributed to the development of the Revised Integrated Model of Self Injurious Activity (Ireland & York, 2012) and the understanding of the specifics of each of the model components. A number of functions for self-injurious behaviour was identified within the research. These functions have been included within the model to

indicate how self-injurious behaviour may result from specific risk factors. This discussion is structured around the components of the Revised Integrated Model of Self Injurious Activity. The final revised model is shown in Figure 10.1 following discussion of each of the components of the model

Temperament factors

The research indicates that likely temperament factors for the Revised Integrated Model of Self Injurious Activity are personality disorder, emotional lability and impulsivity. Personality disorder has been placed within the temperament factor component of the model because previous research indicated the longer term link between self-injury and personality disorder (Nath et al.,2008, Ayodeji et al.,2015), rather than a more temporary state factor. The finding that emotional lability and impulsivity are likely temperament factors also relates to the importance of personality disorder, where men are significantly more likely than women to experience impulsivity as a feature of borderline personality disorder (Hoertel et al.,2014). Impulsivity was also found to distinguish between those who had no history of self-injury and those who did have a history. This supports previous research indicating that elements of impulsivity can account for self-injury. Finally the finding of emotional lability as a risk factor supports previous research, indicating the importance of emotional dysregulation as a factor involved in self-injurious behaviour (Gratz & Chapman, 2007).

A function identified within the temperament factors element of the model was 'absence of adaptive coping strategies'. It is possible that temperament factors may limit the exploration of helpful coping strategies. Individuals who injure themselves because they have no other helpful coping strategies could be said to engage in the behaviour as a habitual coping response. This supports the proposal of Joiner (2005) that self-injurious behaviour can become habitual and the implicit identification hypothesis (Nock, 2009) that individuals engage in self-injury because they identify the behaviour as a means to achieve another function, such as regulation of emotions or to communicate with others. These points indicate that self-injurious behaviour could become a behaviour used to cope with temperament factors in the absence of any other perceived effective coping strategies. If, for example, an individual experiences uncomfortable dysregulated

emotions they may have no viable coping strategy other than self-injury. If this has previously worked either to remove negative emotions, or to generate positive emotions then the self-injurious behaviour has also been reinforced through the other components of the model.

State factors

The results indicated that state factors should include 'unpleasant emotions', 'psychotic symptoms', 'history of mental disorder', 'loss or grief 'and 'unresolved trauma/distress'. History of mental disorder and psychotic symptoms are likely to have overlap, because a history of mental disorder may only be considered a state factor if mental health were to be destabilised, resulting potentially in psychotic symptoms or negative symptoms. This supports the findings of Crump et al. (2014) that a psychiatric diagnosis is a strong risk factor for self-injurious behaviour. One of the functions of self-injurious behaviour identified in the current study was that it was a response to psychotic symptoms. Individuals said, for instance, that they self-injured in response to command hallucinations. This function has not been identified in the literature in a theoretical context. It is possible that individuals respond to distressing voices and do so in order to reduce the distress or remove the aversive effect of a negative voice. Therefore the underlying function may be to regulate emotions. However it has been included as a separate risk factor here, because it adds some specificity for psychiatric patients. This may be a unique reason as to why these forensic patients use self-injury to moderate emotions.

The finding that 'unpleasant emotions' was identified as an important risk factor, supports a wide range of previous research, outlining the affective component of self-injurious behaviour (Nock, 2009, 2010). The other function of self-injurious behaviour found to fit within the state factors element of the model, is 'to regulate/release emotions'. This supports the functions of self-injury outlined by Nock (2009) in terms of automatic negative and automatic positive reinforcement, either removing a negative emotion or generating a positive one. Within the state factors section of the model, it was suggested that perceived burdensomeness would represent a state factor but results did not show this. However Van Orden et al. (2010) outlined that perceived burdensomeness consisted

of ‘affectively laden cognitions of self-hatred’. Within the current model there is a separate factor of ‘negative cognitions’ which links to state factors. It is possible that the affective component of perceived burdensomeness was detected in the current research, but that the cognitive component of ‘perceived burdensomeness’ was not.

The final two risk factors identified were ‘loss or grief’ and ‘unresolved trauma/distress’. Loss or grief has not previously been identified within literature as a specific risk factor for self-injury although it has been recognised that loss by suicide impacts upon suicidal thinking (Swanson & Coleman, 2013). It could be suggested that loss or grief leads to psychological distress, a state factor as it is dynamic in nature which could contribute to the precipitation of self-injurious behaviour. The loss of someone through suicide could be included as a clear warning sign as research indicates a distinct impact on those who may have other risk factors for self-injurious behaviour. The inclusion of the ‘unresolved trauma/distress’ factor supports the existing literature (Gratz et al.,2002) and features in two separate ways in the Revised Integrated Model of Self Injurious Activity. As well as being a ‘state factor’ it is also included as contributing to capacity because of the previous findings of Joiner (2005). Within the current research it appeared that unresolved trauma and distress also represented a state factor because the emotions associated with such unresolved trauma continue to act as a precipitator for self-injurious behaviour. Such unwanted emotions may be managed through the function identified to ‘regulate/release emotions’ included in the state factors element of the model.

Negative cognition

Negative cognition relates directly to the state factors element of the model. It was assumed that cognition was likely to be involved in psychological distress based on research indicating that this was the case for depression (Steeg et al.,2016). The current research identified ‘distressing cognitions’ and ‘poor view of self’ as risk factors. A function identified within the research which appears relevant to the negative cognition element of the model is self-injury being used as ‘a form of punishment to self’. These findings support previous research which has linked cognitions such as self-criticism, intrusions, self-persecution and hopelessness to self-injurious behaviour (Glassman et

al.,2007). Again this supports one of the functions suggested by Nock (2009), 'The Self Punishment hypothesis'.

The role of cognitions in self-injurious behaviour represents an important area of study. This is in part because cognitions are dynamic and can be modified, as outlined by Steeg et al. (2016), meaning that they may represent a clear point of intervention. It was observed that positive cognitions were a large proportion of the findings relating to what stops a person choosing self-injury when they are at increased risk of the behaviour. These specific cognitions are addressed below, but the importance of cognitions has already been outlined in the results of the current study. It represents one of the most interesting findings and offers the potential for targeting treatment interventions for those engaging in self-injurious behaviour. A further modification was made to the overall model to suggest how risk factors may interact with each other. It has been proposed that negative environmental factors may influence negative cognitions leading to further psychological distress.

Negative environmental factors

It was found that a number of risk factors was identified in this component of the Revised Integrated Model of Self Injurious Activity including physical isolation, failed belonging/isolation from others, the secure forensic environment, interpersonal difficulties and negative attitudes towards self-injury from others. Overall these findings reflected the suggestion made by Marzano et al. (2012) that forensic settings expose already vulnerable populations to additional risk and that social environmental research was necessary. The finding that physical isolation and 'being in a secure setting' represented risk factors supported previous research regarding the impact of long periods of inactivity and isolation within secure settings leading to time to think about loved ones (Goomany & Dickinson, 2015). It is unclear how distinct these factors are and there may be overlap in that physical isolation may relate to resenting the secure forensic environment.

Having the time to think about loved ones relates to the finding that 'failed belonging/isolation from others' was a risk factor for self-injurious behaviour and

supports the work of Joiner (2005). It is unclear from the current research how physical isolation and feeling isolated, as an affective component, may be linked or why they are different. The explanation that a forensic environment has a number of elements which force separation from others may reinforce the suggestion made by Van Orden et al. (2010) that failed belongingness should be seen as a dynamic cognitive affective state that may be influenced by an individual's social environment. It is for this reason that an additional link was added to the Revised Integrated Model of Self Injurious Activity, so that negative environmental factors can link to negative cognitions, leading once again to increased risk within state factors.

Within negative environmental factors the risk factor of 'interpersonal difficulties' supports the literature indicating that few people who are engaging in self-injury have a positively functioning relationship with someone (Magne-Ingvar et al.,1992). It is possible that not only the absence of a relationship could be termed an interpersonal difficulty, but also that having arguments, conflict and disagreements with others could be considered an interpersonal difficulty. This may in turn link to the final risk factor identified within the negative environmental factors, 'negative attitudes towards self-injury from others'.

The results for 'negative attitudes towards self-injury from others may be more multifaceted than other risk factors discussed because of the way in which the research addressed questions specifically related to attitudes. This risk factor was identified as a consequence following self-injurious behaviour. The literature does not appear to have recognised 'negative attitude towards self-injury' from another person as a risk factor for self-injury previously, rather it is a finding amongst some healthcare staff (Hopkins, 2002). This finding supports research indicating that negative attitudes can cause individuals who are engaging in such behaviour to feel worse (Marzano et al.,2012) and can potentially precipitate further self-injurious behaviour. The additional link to the Revised Integrated Model of Self Injurious Activity between negative environmental factors and cognition accounts for this. It is possible that an individual may have negative cognitions in response to the negative attitude of someone else within the social environment.

The results showed that staff and patients had significantly different explanations and understanding about some areas of self-injurious behaviour. Patients were more likely to consider that a consequence of self-injurious behaviour would be an 'increase in negative emotions'. It is possible that staff do not understand why a person would engage in behaviour if it makes them feel worse. Previous understanding about motives for self-injury from the perspectives of staff have been identified as 'to regulate affect' (Sandy, 2013) therefore to experience an increase in negative emotions appears paradoxical. When looking at the differences in suggested functions between staff and patients, it is of interest that staff endorsed the reason of 'to influence others' significantly more than patients. This supports previous research indicating that staff endorse the view of self-injury being a behaviour 'to manipulate others' (Sandy, 2013). When looking at situations when self-injury risk was raised but did not occur staff endorsed the function as being due to 'staff verbal or physical intervention'. This implies that when self-injury occurs staff suggest that patients 'intend' to manipulate, but that when no self-injury occurs staff are responsible for this rather than any intrinsic factor of the individual.

Functions identified within the negative environmental factors component of the model included 'to change something in the environment', 'to obtain a care response from others' and 'to influence others'. These support the research of Nock (2009) as they appear to indicate social functions for self-injury. They appear to represent variations of either social positive reinforcement or social negative reinforcement. If a risk factor of 'interpersonal difficulties' is present as a negative environmental factor, removing the interpersonal difficulty through self-injury would be an example of social negative reinforcement. If a risk factor of failed belonging or feeling isolated is present, removing this through self-injury and gaining a care response would be an example of social positive reinforcement.

Increased propensity

Originally the propensity element of the Revised Integrated Model of Self Injurious Activity comprised state, temperament and negative environmental factors that lead to increased propensity. However it was found that the propensity component may include

separate risk factors such as ‘increased positive emotions’, ‘increased negative emotions’ ‘positive attitudes towards self-injury’, ‘anticipated affect of engaging in self-injury’ ‘intention regarding self-injury’ and ‘perceived behavioural control regarding self-injury’. The results indicated that an increase in positive emotions and an increase in negative emotions were both consequences observed after self-injurious behaviour had occurred. For some participants these consequences were recorded for the same instance of self-injurious behaviour. The increase in positive emotions endorses previous research about self-injury generating positive emotion or thought (Nock, 2009) but not the finding that negative emotion may increase. Nock’s (2009) other function relating to emotions was that self-injury would remove a difficult emotion, not generate one. This new finding may explain the mechanism by which self-injury becomes a repeated behaviour. If self-injury does indeed increase both positive and negative emotions the next incident of self-injurious behaviour may occur in an attempt to regenerate positive emotions and remove negative emotions. An alternative explanation may relate to different emotions being impacted by self-injury. For instance, anger may be replaced by calm, but an increase in shame may also occur regarding engaging in self-injurious behaviour. It is not clear how these mechanisms operate, but they were included in the propensity element of the model because they are a consequence of self-injury and the likelihood that these findings have some form of reinforcing properties.

The results of ‘positive attitudes towards self-injury’ ‘anticipated affect of engaging in self-injury’, ‘intention regarding self-injury’ and ‘perceived behavioural control regarding self-injury’ were included in the propensity element of the model because of the link between intentions and attitudes. It was considered that intention and propensity have similar meanings in relation to the intention or aim to carry out behaviour. These findings support previous research that attitudes can be used to predict self-injurious behaviour (O’Connor & Armitage, 2003). The inclusion of positive attitudinal factors within the propensity element of the Revised Integrated Model of Self Injurious Activity also supports the suggestion made by Lewis et al. (2011) that individuals reinforce their own attitudes towards self-injury the more often they undertake it. This corresponds with the current model in that increased propensity, and positive attitudes, lead to increased capacity to engage in self-injurious activity.

Anticipated affect was included in the current study based on the work carried out by O'Connor & Armitage (2003). This described how individuals rate they will feel after engaging in the behaviour. The combination of questions in this research was the only significant predictor of previous tendency to engage in self-injurious behaviour other than the overall positive attitude towards self-injury. It is interesting that this finding occurred alongside the conclusion that increased negative emotions and increased positive emotions were both consequences for engaging in self-injurious behaviour. It could be postulated that an individual may anticipate feeling positive emotions following self-injury which may occur, but that an emergence of negative emotions in parallel may contribute to the reinforcing properties of self-injurious behaviour. Intention and perceived behavioural control were also included as analyses indicated that these variables also contributed to the prediction of past tendency to engage in self injurious behaviour. Positively these attitudinal components were based on just 11 questions generated from study 1 which were based initially on the Theory of Planned Behaviour. In practicable terms, the administration of 11 to 18 questions is likely to take a brief period of time for clinicians, but may generate very useful information about potential propensity towards self-injury.

Increased capacity

The results that apply to the capacity element of the Revised Integrated Model of Self Injurious Behaviour confirm previous research into some of the static or historical risk factors for self-injurious behaviours. Risk factors identified which impact upon capacity were, 'self-damaging behaviour', 'violent behaviour/ideation', 'self-injury history', 'substance/alcohol history', 'childhood abuse', 'suicide history' and 'habituation to the behaviour'. The risk factors of self-damaging behaviour, self-injury history and suicide history all replicate extensive previous research into the impact of previous harmful behaviour on subsequent self-injury (Hawton et al.,2003; Guan et al.,2012). The finding also supports Joiner's (2005) Interpersonal Psychological Theory of Suicidal Behaviour, explaining how capacity develops through certain kinds of experiences. Although these risk factors may seem obvious to those who are aware of the literature, it is important to highlight them specifically in the capacity element of the model.

The risk factors of 'substance/alcohol abuse' and 'childhood abuse' are both well established, but again are historical and static in nature (e.g. Moller et al. 2013; Gratz et al. 2002). The findings also relate to the explanation offered by Joiner (2005) in relation to childhood abuse habituating people to the fear associated with self-injury. The Interpersonal Psychological Theory of Suicidal Behaviour states that any life-threatening behaviour may habituate a person to the potential pain associated with harming themselves. If the remaining two factors are considered, it is possible to see that they also support Joiner's theory. 'Violent behaviour/ideation' and 'habituation to the behaviour' both involve exposure to potential pain. Violent behaviour is likely to expose people to risky situations and the experience of physical pain. This supports the work of Van Orden et al. (2010) in respect of acquired capability. 'Habituation to the behaviour' was identified as a consequence of self-injury when participants outlined that the behaviour was 'normal' for them and accepted it. Again this reinforces Joiner's (2005) notion that to be competent at anything, one must have practice and experience. In conclusion the risk factors identified within the capacity element of the Revised Integrated Model of Self Injurious Activity are all relatively well established within the literature and conceptually all contribute to the capacity of an individual to engage in self-injurious behaviour.

The function of 'to commit suicide' was identified by some participants as they reason why they engaged in self -injurious behaviour. This was included at the capacity point of the model for self-injurious behaviour, because of the direct link the model proposes to self-injurious activity. It was considered important to retain this function within the model as an important reminder that, if an individual has a number of risk factors identified and their motivation is to commit suicide, this is an incredibly risky situation. This would necessitate consideration by professionals given the link between self-injury and suicide (Guan et al.,2012). Capacity as a factor appears to contain all the well-established risk factors for self-injurious activity. It is likely that many individuals within forensic settings have a number of these risk factors, if not all of them, present. This is important for clinicians to recognise. However the other components within the Revised Integrated Model of Self Injurious Activity offer understanding about where to intervene.

Even when risk factors such as those within capacity are present, self-injurious behaviour may not be the behaviour of choice.

Functions of self-injury

It was found that individuals reported engaging in self-injurious behaviour for more than one reason. One of the major criticisms of Nock's (2004) Four Function Model was that it did not account for mixed motivations for self-injury or repeated engagement in self-injurious behaviour. The current research indicates that individuals engage in self-injurious behaviour to meet more than one function at a time. Therefore it was considered important to map the identified functions onto the Revised Integrated Model of Self Injurious Activity in order to identify what may contribute to a particular function. If an individual experienced high levels of self-critical thinking this may cause them psychological distress. They may injure themselves as a form of punishment not only 'for being a terrible person', but also in an attempt to moderate the psychological distress experienced i.e. to regulate emotions.

Protective factors for self-injury

Results identified protective factors for self-injurious behaviour beyond those found in the literature and in line with predictions. It has been stressed that the literature on protective factors for self-injury is sparse. Therefore the current research has been largely exploratory in nature. Self Determination Theory has been used throughout to explore protective factors, and results will be considered within the context of this theory. The protective factors identified by experts which appear to overlap with the SDT component of *relatedness* are 'positive staff attitudes and relationships' and 'support available'. This echoes previous research outlining the importance of support from others (Reisner et al.,2014). With regard to *competence,* the factors of 'effective coping', 'insight into difficulties' and 'emotional resiliency' appear to fit. Coping style has been identified previously as a potential protective factor for self-injury (Williams & Hasking, 2010). Finally in terms of *autonomy* the factors of 'motivation to change behaviour and seek help', 'ability to respond to treatment' and 'positive sense of self' are relevant. These overall findings, obtained from Study one, can lend support to the assertion by Britton et al. (2011) that Self Determination Theory could be used to engage individuals who are

struggling with self-injurious behaviours. The three areas covered could be used to generate specific protective factors to develop in individual cases.

In addition to fitting well with Self Determination Theory, results also appear relevant to the Revised Integrated Model of Self Injurious Activity. If it is considered that each component within the model represents a risk factor taking an individual closer to self-injurious behaviour, it would be hoped that relevant protective factors may moderate such risk. For example 'positive staff attitudes', 'safe environment', 'external measures in place' and 'support available' could all moderate factors within *negative environmental factors*. 'Effective coping' could moderate 'absence of effective coping' in *temperament factors*. 'Emotional resiliency' could moderate 'unpleasant emotions' as a *state factor*, 'positive sense of self' could moderate *negative cognition*. Finally 'insight into difficulties' and 'ability to respond to treatment' could moderate *increased propensity*. Whilst this is all speculation, further research into the impact of protective factors on various risk factors will increase the chances of various interventions being successful in moderating risk.

Further new results were generated when considering participants who had engaged in self-injurious behaviours. Protective factors identified included; 'cognitions about the future', 'cognitions about perceived consequences', 'cognitions about family and belonging', 'cognitions about the perceived impact of self-injury on others', 'cognitions about positive self-efficacy', 'cognitions about the value of life', 'lack of implement available' and 'used an alternative coping strategy'. When these are considered overall, the finding that cognitions are so important and frequent supports the research of Voon et al. (2014) into the importance of cognitive reappraisal as protective against self-injury. The current research also makes some headway towards addressing the suggestion made by Batey et al. (2010) that the types of cognition involved in self-injury were increasingly in need of study. In some respects it did not greatly develop the types of negative cognition a person may experience other than 'poor view of self' and general 'distressing cognitions'. The protective cognitions could provide a starting point from which to explore what negative cognitions they may protect against. One type of cognition identified as protective gives a good example of this. 'Cognitions about family and

belonging' appears a counter to 'failed belonging' within negative environmental factors in the Revised Integrated Model of Self Injurious Activity. In addition to this 'cognitions about family and belonging' appear to link to relatedness within Self Determination Theory (Ryan & Deci, 2002).

If the rest of the protective factors are examined in relation to Self Determination Theory again it appears as if there is overlap. Factors such as 'cognitions about the value of life', 'cognitions about the future' and 'cognitions about positive self-efficacy' link to *autonomy*. Factors such as 'cognitions about perceived consequences' and 'used an alternative coping strategy' link to *competence*. Finally 'cognitions about the potential impact on others' along with 'cognitions about family and belonging' link to *relatedness*. As with the expert identified protective factors, these protective factors appear to overlap with elements of the Revised Integrated Model of Self Injurious Activity. 'Used an alternative coping strategy' may moderate 'absence of adaptive coping strategies' in *temperament factors*. 'Lack of implement available' is a specific protective factor relevant to the secure forensic environment, and thus could be considered as a counter to *negative environmental factors*. 'Cognitions about the potential impact on others' is possibly a protective factor against the cognition of 'perceived burdensomeness' within *state factors*. The remaining cognitions may act through the *negative cognition* element of the model.

The final element to review is the difference between staff and patients in their understanding of what may protect someone from engaging in self-injurious behaviour. There was no research exploring such differences previously so this element of the study was exploratory in nature. The results from differences between staff and patients when risk for self-injury was raised but did not take place was that staff endorsed *staff physical or verbal intervention* more than patients. In contrast, patients endorsed functions such as *cognitions about the future, cognitions about family and belonging* and *cognitions about the impact on others* significantly more than staff. This may indicate that staff members felt that patients not harming themselves was due to staff intervention rather than intrinsic to the patient. This finding could be explained by Self Determination Theory (Deci & Ryan, 1985) in that preventing or intervening in potential risk for self-injury is a part of a

staff member's role. It is possible that their view of success relates to their sense of autonomy, competence and relatedness in being able to carry out something effective to help a patient who may be at risk. Interestingly, experts identified staff positive attitudes as a potential protective factor for self-injury, but this was not identified as a risk factor. It is possible that some form of bias is at work: staff do not attribute their behaviour as contributing to risk, but they do consider that their behaviour contributed to the prevention of risk.

The Revised Integrated Model of Self Injurious Behaviour is in Figure 10.1 below.

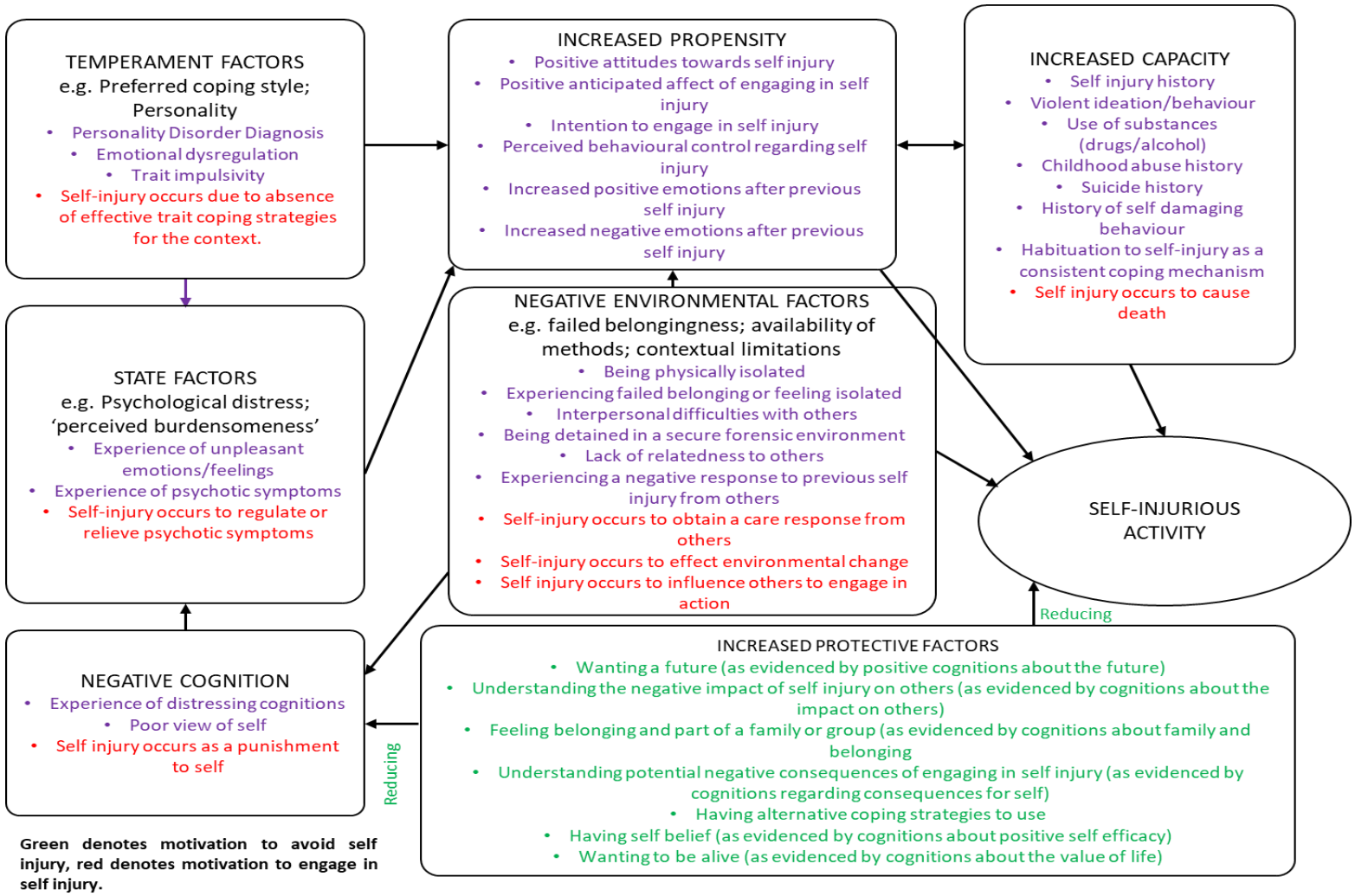

Figure 10.1: Revised Integrated Model of Self-Injurious Activity (Ireland & York)

Limitations of the research

Whilst the research sought to minimise limitations some remain. The method of sampling used excluded those participants whose Responsible Clinicians considered were too mentally unwell or behaviourally disruptive to participate in the research. It is not clear what effect this may have had on the findings. One form of 'behavioural disruption' or 'mental instability' may have been engaging in self-injurious or suicidal behaviour. Whilst it is understandable that Responsible Clinicians did not give consent for these participants to be approached the participants may have offered valuable insights into the functions of their behaviour and also their experiences. This needs to be recognised as a limitation, and may suggest that the results of the study cannot be generalised to the particular hospital population as a whole.

The current research used self-report measures in order to collect data. Responses could have been biased by participants' potential self-misconceptions. Attempts were made to counter this, such as using incident reports to gather information from the second study, but this would have been unfeasible for the third study because of the much larger sample size. Different data collection methods such as behavioural observation could have been used to counteract this limitation. There may be some benefit from collecting data regarding self-injury from multidisciplinary team notes to identify antecedents, behaviours, consequences and potential functions.

Participants were required to focus on and acknowledge difficult experiences such as engaging in or dealing with self-injury. Some participants may have found this difficult because it may have threatened their self-image as a competent person – especially if the behaviour was historical. They may have wished to avoid discussing and re-experiencing it. This could have compromised the reliability of the responses as well as contributing towards bias in the sample. This was addressed by informing participants that they were not required to give information by which they could be identified and that responses would remain anonymous. However these reservations may have still existed in face to face interactions with the researcher.

There were many strengths in using a functional assessment (SORC) approach such as addressing the functional processes that produce and maintain behaviour rather than classifying behaviour (Nock & Prinstein, 2004). It produced a wealth of interesting and informative information. However the functional assessment method used was semi-structured which depends upon the questions asked by members of the research team and identifying any individual differences which may occur. For example study 2, when the main researcher conducted the discussions, organism factors or background factors highlighted by both staff and patients included substance/alcohol history, childhood abuse history and suicide history. This was unsurprising given the literature regarding each of these factors within secure settings and their link to self-injury (e.g. Haw et al.,2001; Gratz et al.,2002; Guan et al.,2012). However, within study 3, of the 167 incidents analysed, suicide history, childhood abuse and substance use history were only mentioned by 1% of the sample. It is possible that there was some form of researcher bias between studies or that patients and staff are unsure about what historical or background factors make self-injury more likely. Another possibility is that individuals do not consider that such background factors contribute to their choice of self-injury. An individual may conceptualise suicidal behaviour and self-injurious behaviour as very different, especially if the intent was different. Childhood abuse and substance use history are likely to be much more historical in nature for men in secure psychiatric services, so they may not consider the impact either of these factors has on their current self-injurious behaviour.

The research aimed to generate questions which could be used to assess attitudes towards engaging in self-injurious behaviour. In developing them it is important to consider the concept of validity: does the question measure the concept that it claims to measure? The attitude questions were combined to give a positive attitude total for each participant and sub-totals for concepts such as ‘perceived behavioural control’, ‘subjective norms’ and ‘anticipated affect’. However, it is not definitive that these totals measured the concepts they claimed to measure. The questions were generated using the Theory of Planned Behaviour as a theoretical approach and input from experts. Further testing of the validity of these questions address their potential limitations.

Implications for treatment and risk management planning

The research has contributed to the literature regarding risk factors for self-injurious behaviour. It highlights how static/historical risk factors may be considered relevant for *capacity* for self-injury, but are unlikely to be immediate intervention points useful in supporting someone who is engaging in self-injurious behaviour. Rather it indicates that social, environmental, cognitive, attitudinal and dynamic risk factors are also relevant when considering self-injurious behaviour. Finally, the research explored the role of protective factors for self-injury. A number of previously unrecognised factors was identified. These may protect someone choosing self-injury, even when risk factors are present.

Further education of staff may be beneficial when looking at the differences found between staff and patients in relation to understanding functions and consequences of self-injury, and what protects someone from undertaking such behaviour. As with earlier research into staff attitudes (e.g. Sandy, 2013) negative connotations relating to describing patients who self-injure as manipulative were identified. When looking at incidents where self-injury did not occur staff significantly endorsed the function as being due to 'staff physical and verbal intervention'. The dialectic of these views is that when a patient self-injures they are being 'manipulative', yet if they do not engage in the behaviour this is not due to their autonomy, but to staff intervention. Muhelenkamp et al. (2013) concluded that increased training about self-injury was associated with higher levels of positive empathy. Education that includes information about some of the functions which self-injury may involve would be useful. Providing staff with information about protective information would also give them alternative views about the way in which they can support patients and offer empathy and validation. This could prevent contributing to social environmental factors that may invalidate patients and contribute to the maintenance of the self-injurious behaviour.

It was intended to compare two groups of patients who had never engaged in self-injurious behaviour. Unfortunately the sample of patients who had not engaged in self-injurious behaviour was not large enough for comparison using regression analysis. It is likely that this is because of the high prevalence of rates for self-injury observed within

secure forensic settings (Appleby, 1992; Daffern & Howells, 2009) and emphasises the need to understand and intervene in this behaviour within such a high risk population.

The current research is helpful in respect of moving towards the re-inclusion of positive psychology, focusing upon factors which help individuals to thrive and flourish rather than mere pathology (Hefferon & Boniwell, 2011). The further encouragement of research which focuses upon protective factors for self-injury is likely to enhance the use of a salutogenic approach (Anotonovsky, 1979) who described protective factors diminishing the risk of disease, and in the current case, self-injurious behaviour.

Another finding which is relevant to treatment and risk management planning is the notion of mixed motivations. It was observed that individuals can engage in self-injurious behaviour for more than one single motivation on a given occasion. This is an important consideration when planning treatment intervention or managing risk. Focus on one 'known' or common motivation such as self-injury being used to regulate emotions may miss other important considerations of an individual's presentation or their reasons for engaging in self-injurious behaviour. An intervention or risk management strategy which misses elements of an individual's presentation or motivations is unlikely to be fully effective.

Development of the Revised Integrated Model of Self Injurious Activity to the point where it could effectively be used as a specific formulation tool for self-injurious behaviour is a significant outcome. The model includes well established risk factors for self-injury such as 'previous self-injury history' and 'childhood abuse' which are important to recognise. It also offers more specific risk factors by which clinicians can intervene. These are dynamic in nature and thus subject to change. The model has now begun to offer insights into protective factors which could be developed with an individual to offer them alternatives at a given component within the model. Some individuals may exhibit all factors in the model whilst other individuals may only need treatment and intervention using one element. The current model is flexible enough to account for such individual differences but also acknowledges well researched risk factors indicating potential risk. Specific understanding of an individual's risk is likely to

support that person and clinicians in identifying specific treatment interventions to target their difficulties. For example if an individual experienced negative self-critical cognitions, the development of compassion to access more positive cognitions may be suggested.

Directions for future work

It has been shown that it is critically important to develop understanding of the cognitions involved in self-injury. Future work could explore cognitions and attempt to identify the types of cognition linked with self-injurious behaviour. Some work has already been completed in relation to 'failed belonging' and 'perceived burdensomeness'. However the Revised Integrated Model of Self Injurious Activity indicates the role of negative cognitions at an earlier stage leading to change in state factors such as emotions. Protective cognitions within the current research were more specific and suggest a starting point for research into cognitions which impact upon risk.

Protective factors for self-injurious behaviour were previously under researched. Now some headway has been made in exploring the factors that may protect against self-injury. However this work needs to be developed to understand whether they are common factors to everyone or whether certain protective factors work for certain individuals. It would also be helpful to determine whether some protective factors moderate the impact of other risk factors. For example, does 'relatedness to family' moderate 'failed belongingness', or does any protective factor lessen the risk of self-injury? If the role and impact of various protective factors can be established it may be possible to identify interventions which develop that particular protective factor.

It has been established that staff attitudes form an important part of the social environment. Some staff hold negative attitudes about self-injurious behaviour but research has not explored the impact that these attitudes have on the people for whom they care. It would be interesting to ask patients more directly about the impact of negative staff attitudes on their presentation. This may further contribute to understanding the negative cognitions and emotions that patients experience in response to negative attitudes from others. Consideration of staff education and motivation in

relation to attitudes and subsequent impact on treatment of patients engaging in self-injury would also be useful as part of the social environmental context.

It would be interesting to ascertain whether the Revised Integrated Model of Self Injurious Activity can be applied to other populations such as the different categories of the prison population. The prison population is likely to share some of the same characteristics as the secure psychiatric population. It would be useful to test the model within the general population or specific groups such as adolescents. This could outline specific *negative environmental factors* by population: for example considering the impact of contagion within an adolescent population (Swanson & Coleman, 2013) and with other young people who injure themselves as part of the social context.

Due to the design of the current study, more questions relating to anticipated affect were included to assess attitudes towards self-injury than other elements of the Theory of Planned Behaviour such as subjective norms and moral norms. Previous research has indicated that using a combination of all these factors has contributed to increased variance in predicting self-injurious behaviour. It would be useful to consider how each of these attitudinal areas could be included and further tested as part of the Revised Integrated Model of Self Injurious Activity. Conceptually there are components of attitude, such as 'subjective norms', that conceivably contribute to an understanding of potential negative environmental factors.

It was demonstrated that when individuals engage in self-injurious behaviour, they can do so for more than one motivation or for mixed motivations. It would be useful to conduct research into whether motivations for self-injury change over time. Some of the research into adolescent self-injury suggests that 'contagion' may play a role, thereby offering a social motivation (Swanson & Coleman, 2013). It is possible that as self-injurious behaviour progresses, the functions may change and develop based upon various reinforcing factors. Future research could attempt to ascertain whether these changes do occur and, if they do, make recommendations about appropriate interventions to match the function.

Although this work has contributed some understanding of self-injurious behaviour only limited information was gained about the interaction effects of various factors. Further testing of these interaction effects of the components of the Revised Integrated Model of Self Injurious Activity would add to understanding the complexity of self-injurious behaviour.

Overall Conclusion

This research demonstrates the importance of applying theory to the understanding of self-injurious behaviour. Areas addressed within the current research were to expand knowledge of risk factors for self-injurious behaviour; specifically dynamic risk factors, to gain some understanding of the factors which may protect against self-injurious behaviour, even when risk factors may be present, and to begin to gain an understanding of the impact of attitudes towards self-injury as an important social environmental factor. It aimed to explore and develop the Integrated Model of Self Injurious Activity (Ireland & York, 2012) as a potential means for understanding self-injurious behaviour. The importance of developing this model was to try and offer both an academic and clinically useful conceptualisation of self-injurious behaviour within secure forensic settings. The results have contributed to the Revised Integrated Model of Self Injurious Activity.

By moving beyond a purely descriptive analysis of self-injury to consider other dynamic factors involved in the behaviour, it has been shown how such components may contribute to the understanding of the behaviour for an individual. The research has indicated that motivations for self-injurious behaviour can be mixed and can change over time. Previous models of self-injury did not account for the absence of self-injurious behaviour as a choice even when pre-determined risk factors were present. This may have been due to the omission of the importance of protective factors. Outlining potential protective factors for self-injury based on Self Determination Theory now indicates promise as a theoretical base for such factors.

The present research supports the inclusion of cognitions into considerations of the risk for self-injury. There was previously limited research into this. Negative cognitions are included as a component within the Revised Integrated Model of Self Injurious Activity.

They indicated that distressing cognitions, cognitions about punishment and cognitions about having a poor view of self are likely to contribute to risk of self-injury. The protective cognitions are more specific in nature and may offer insight into the direction of future research. Voon et al. (2014) highlighted the importance of cognition reappraisal regarding self-injury, and the current research echoes the likelihood that some form of cognitive reappraisal occurs to inhibit self-injury as a behavioural choice at times, even when other risk factors may be present.

The inclusion of social environmental variables when addressing self-injurious behaviour has also been recognised. There are a number of factors within the social environment which may impact upon self-injurious behaviour; particularly when that environment is a secure forensic one. One major component of the social environment within such a setting is the attitudes of the healthcare professionals who provide the most social contact and support for patients. Results indicated that staff may attribute the choice to self-injure to factors about the patients, but when individuals do not self-injure, but are at raised risk, it is the staff who are the main protective factor. The views of the patients differed as to why they do not engage in self-injurious behaviour even when risk factors may be present.

The attitudes of those engaging in self-injurious behaviour are also relevant. Positive attitudes towards self-injury, anticipated affect, intentions and perceived behavioural control were found to predict previous tendency to engage in self-injurious behaviour. The work of O'Connor & Armitage (2003) indicated the importance of attitudes and the Theory of Planned Behaviour in trying to predict self-injury. The current research supports these findings and has included attitudes within the propensity component of the Revised Integrated Model of Self Injurious Activity.

Finally the Revised Integrated Model of Self Injurious Activity has been developed by incorporating theoretically driven components and by exploring areas such as attitudes and protective factors which have had limited or no previous attention. The model includes those factors known to be predictive of self-injurious behaviour but which are static. They are important as they indicate raised risk, but are generally not amenable to

change. The strength of this research has been the development and exploration of dynamic risk factors which appear to impact on self-injurious behaviour and which are subject to change and potential intervention. The model accounts for times when risk may be present but self-injury is not the behaviour of choice because of the protective factors which may be available for an individual. Of great importance is that the model is based on current literature and can be used as a formulation model for individual self-injurious behaviour within secure forensic settings. This may assist healthcare professionals in providing appropriate and helpful interventions to support individuals engaging in self-injurious behaviour.

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Information about this study

Please retain this sheet for your information.

In this study, you will be asked to be a participant in a 'Delphi study' due to your specialism in the area of self-injury. Specialists have been selected on the basis of either two academic publications on the area of self-injury in the last five years, or due to their current practical experience of working with those who self-injure. This is an important area of study, as research on attitudes towards self-injury of those who engage in the behaviour is very limited, as is the development of risk assessment which addresses risk and protective factors for engaging in self-injurious behaviour.

What is a Delphi?
Typically a Delphi study utilises a 'panel' of specialists often referred to as experts to generate and prioritise question responses. Key features of the Delphi technique are that the anonymity of the participants is preserved, allowing free expression of opinion. The Delphi uses a series of 'rounds' of questionnaires. In each round a summary of responses to the previous round is fed back to the participants, which allows a degree of dialogue to take place. This Delphi study will form the basis for a series of studies into the area of self-injury.

What will I have to do?
You will be asked to participate in three Delphi 'rounds' in order to assist in identifying questions to understand the attitudes of individuals engaging in self-injurious behaviour. You will also be asked to give your input into relevance of risk factors for self-injury and also those factors which you believe may protect against self-injury. I would then ask you to email your responses back to me. Each round should take approximately 30 minutes of your time, which I realise is valuable, so thank you.

Withdrawing from the study
The emailing of your responses will be classed as your consent to take part in this study. After you have submitted your feedback you will have 48 hours to withdraw from the study. After this point all participant responses will be merged, and it will not be possible to withdraw from the study. You can withdraw from the study after any of the three rounds, however any data from previous rounds would be used as it would have been merged with the main data set.

Anonymity
Your name and contact details will only be known to me, as the researcher. At no point will other members of the Panel of experts, my supervisors or external examiners be informed as to who is on the panel. If my supervisors or examiners request to see raw data it will be anonymised. Once the Delphi process is completed, contact details will be destroyed.

In order to protect your anonymity, emails will be sent to you individually. This avoids a group email whereby other Panel members would be able to identify one another.

The questionnaires and other materials that you complete will be kept for five years, but after that period, these will be destroyed. All responses will be reported in aggregate

form; no person's responses will be singled out in any way in the report of the results of this study. At the end of the study you will be sent a debrief sheet which will advise of further details in relation to your participation and what it will contribute towards.

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Delphi Round One

The following questions relate to developing questions to be used to assess the attitudes of those individuals who engage in self-injurious behaviour. Please answer the following questions;

Section 1: Expert information

1. What is your current work role?

2. What experience do you have in terms of specialising in the area of self-injury?

3. In the area of self-injury, would you consider yourself to be a practitioner, and academic or both?

4. What is your nationality?

Section 2: Definitions

5. What term do you prefer when discussing self-injury?

6. How would you define self-injurious behaviour?

Section 3: Risk factors

For this section please rate how important you believe each suggested risk factor to be in terms of it contributing to the risk of an individual self-injuring.

Risk factors		Essential as a risk factor	Important	Don't know	Should not be included as a risk factor
1.	*Mental Illness*				
2.	*Personality Disorder*				
3.	*Learning Disorder*				
4.	*Childhood abuse*				
5.	*Experience of negative emotions*				
6.	*Experience of negative cognitions*				
7.	*Low tolerance for distress*				
8.	*Poor communication skills*				
9.	*Poor social problems solving skills*				
10.	*Experience of high stress levels*				
11.	*Social isolation*				
12.	*Drug abuse*				
13.	*Alcohol abuse*				
14.	*Proximity to others self-injuring*				
15.	*Recent aggressive gestures towards others*				
16.	*Access to self-injurious materials*				
17.	*Recent detention in a secure setting (e.g. prison) or hospital*				
18.	*Verbal threat of self-injury made*				
19.	*Family history of self-injury*				
20.	*Previous suicide attempt*				
21.	*Negative attitudes towards self-injury of care staff involved in the individuals' care.*				
22.	*History of violence towards others*				

23.	*Recent negative change in mood*				
24.	*Recent negative change in behaviour*				
25.	*Relapse of mental illness*				
26.	*Noncompliance with psychotropic medication or relevant therapy*				
27.	*Impulsivity*				

Please add any further risk factors you believe to be relevant for assessing the risk of self-injury:

-

Section 4: Protective factors

For this section please rate how important you think each protective factor is (i.e. a factor that protects the individual in some way from engaging in self injury):

Protective factors		Essential as a protective factor	Important	Don't know	Should not be included as a protective factor
1.	*Has sought help for previous self-injury*				
2.	*Family/friends support system present*				
3.	*Significant positive intimate relationship*				
4.	*Connection to religion or spiritual understanding*				
5.	*Sustained participation in enjoyable/structured activities*				
6.	*Taking part in relevant treatment*				
7.	*Effective problem solving skills*				
8.	*Raised level of observations by carers*				

Please add any further protective factors which you consider may protect individuals against the risk of self-injury

-

Please continue to the next page, thank you.

Section 5: Attitudinal measure

For this section you are asked to suggest questions which could be used to assess an individual's intentions to engage in self-injurious behaviour. ***What questions could be asked to determine....***

Q1. Whether an individual intends to engage in self injurious behaviour
A1.
Q2. When, where and how the individual may carry out self-injurious behaviour
A2.
Q3. What the individual's attitude is towards self-injury
A3.
Q4. How beneficial the individual thinks engaging in self-injury will be for them
A4.
Q5. How much emphasis the individual places on the views of family & friends views of their self-injury
A5.
Q6. How much emphasis the individual places on the views of those around them in relation to self-injury
A6.
Q7. How easy or difficult the individual would find it to engage in self injury
A7.
Q8. What the individual's perception is about the control they have over engaging in self injury
A8.
Q9. How the individual expects to feel if they were to engage in self injurious behaviour
A9.

Q10. The individual's perception of the ease of engaging in self injury
A.10
Q11. How much control the individual perceives to have over engaging in self injury
A.11
Q12. Whether an individual sees themselves as belonging to the group of 'self-injurers'
A12.
Q13. What the individual's moral norms are in relation to self-injury
A13.
Q14. Whether the person has engaged in self-injury in the past
A14
Q15. What the individual feels about others who self-injure
A15.
Q16. Please use this space to suggest any other questions which you consider to be effective in assessing an individual's intention or attitude towards self-injury?

Section 6: Any other comments?

Please use this space to include any other comments which you think are relevant to the study.

Thank you very much for your time. I will email you with the second round of the Delphi in a few weeks' time..

Final Debriefing Sheet

Thank you for participating in this study.

Aims of the study

- The first aim of the study was to generate questions to understand the attitudes towards self-injury of those engaging in the behaviour.
- The second aim of the study was to gain expert opinion about risk and protective factors for self-injurious behaviour.

Theory the study is based on

The initial selection of areas covered in the attitudinal measure was based on the Theory of Planned Behaviour (Ajzen, 1991). This theory suggests that behaviour is influenced by behavioural intention to carry out the behaviour. Within the theory behavioural intention is predicted by attitudes, subjective norms and perceived behavioural control. This theory has been applied to various health behaviours including parasuicide (O'Connor & Armitage, 2006), and this influenced the development of the current research. Other areas covered within the questionnaire were influenced by research indicating that they contributed to the variance seen in a particular behaviour. For example questions relating to implementation intentions (Sheeran, Conner & Norman, 2001), moral norms, anticipated affect (Conner & Armitage, 1998), past behaviour (Norman & Conner, 2006) and group norms (Terry & Hogg, 1996) were included as research indicated that they may contribute to the prediction of a certain behaviour.

The Delphi approach

The method used within this study was the Delphi approach. This required a group of specialists to take part in three rounds to identify and consider salient questions in order to further refine the attitudinal measure and the specific risk and protective factors. The Delphi method is a flexible method which is used to draw together existing knowledge and pinpoint areas of agreement and disagreement.

Each Delphi round has been used to combine responses from specialists to create a measure based on a common consensus on the information gained from the expert panel

to consider the questions which are most effective in measuring attitudes about self-injury.

Further information

As outlined in the information sheet, you were able to withdraw from the study up until 48 hours after emailing your responses. Following this 48 hour period you were unable to withdraw from the study. The reason is that following each round, your responses were merged with the whole participant group. You can, however, withdraw following any of the three rounds, but after the 48 hour time period your data from previous rounds would be used as part of the merged data set. As outlined in the information sheet, no individual person's responses will be identified in any way.

Thank you again for participating, and taking the time to help with this study. If you would like more information, or have any further questions about any aspect of the study, then please feel free to contact **Charlotte York**:

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Delphi study round two measure

Please find below the need/risk factors for self-injury you were asked to rate within the first round of the study. The corresponding percentages for participants who endorsed a particular choice are indicated. You will also find your own response for the first round highlighted in yellow. Please indicate your response in light of this information.

Need/risk factors for self-injury

Factor	Essential	Important	Don't know	Should not be included
Mental illness	27%	64%	6%	3%
Personality disorder	36%	58%	3%	3%
Learning disorder	9%	42%	39%	9%
Childhood abuse	33%	55%	12%	0%
Experience of negative emotions	39%	55% **	0%	3%
Experience of negative cognitions	36%	55% **	3%	3%
Low tolerance for distress	33%	58%	3%	6%
Difficulty in communicating	33%	45% **	6%	12%
Difficulty in problem solving	39%	52% **	9%	0% ^^
Experience of high stress levels	24%	58% **	9%	6%
Social isolation	13%	56%	22%	6% ^^
Has abused drugs	6%	67%	18%	9%
Has abused alcohol	6%	73%	12%	9%
Proximity to others self-injuring	12%	51% **	15%	18%
Recent aggressive gestures towards others	6%	33%	36%	24%
Access to self-injurious materials	19%	34%	19%	28%^^
Recent arrival to a secure setting	12%	51% **	18%	15%
Verbal threat of self-injury made	27%	58% **	6%	6%
Family history of self-injury	24%	58% **	15%	0%
Previous suicide attempt	51%	42% **	3%	0%
Negative attitudes towards self-injury of care staff involved in the individuals' care.	9%	39%	27%	24%
History of violence	9%	21%	42%	27%

towards others								
Recent negative change in mood	24%		48% **		18%		6%	
Recent negative change in behaviour	15%		39%		30%		15%	
Relapse of mental illness	15%		51%		24%		9%	
Noncompliance with psychotropic medication or relevant therapy	15%		39% **		27%		15%	
Impulsivity	33%		60% **		0%		3%	

** This signifies the fact that one participant created their own column of 'small risk factor'. The * has been placed in the column that was closest to the original response.

^ This signifies that there was a missing response from a participant, so the average is taken from 32 participants rather than the full 33.

These are the factors additionally suggested by participants from the first round of the Delphi study. Please also take the time to rate these factors as to how important you consider them to be in terms of being need/risk factors for self-injury, to be included in a needs assessment for self-injury. Thank you.

Need/risk factors for self-injury suggested by participants in round 1

Factor	Essential	Important	Don't know	Should not be included
Childhood trauma (any kind)				
Emotional instability				
Attachment problems				
Poor quality of life				
Low self-assessed mental health				
Low self esteem				
Lack of social support				
Dissociation				
Poor emotional self-expression				
Significant loss/grief				
Engagement in Sex Offender Treatment Programme				
Chronic illness				
Learned helplessness				
Unresolved emotional difficulties				
Maladaptive schemas				

Problematic interpersonal relationships				
High pain tolerance				
Negative body regard				
Self-hatred and high levels of shame				
Lack of social support				
Compulsivity				
Powerlessness				
Violent ideation				
Hopelessness				
Social learning				
Features relating to borderline personality disorder.				
History of self-injury				

Please find below the protective factors for self-injury you were asked to rate within the first round of the study. The corresponding percentages for participants who endorsed a particular choice are indicated. You will also find your own response for the first round highlighted in yellow. Please indicate your response in light of this information.

Protective factors for self-injury

Factor	Essential		Important		Don't know		Should not be included	
Has sought help for previous self-injury	45%		52%		0%		3%	
Family/friends support system present	58%		42%		0%		0%	
Significant positive intimate relationship	45%		45%		9%		0%	
Connection to religion or spiritual understanding	6%		39%		36%		18%	
Sustained participation in enjoyable/structured activities	30%		52%		12%		6%	
Taking part in relevant treatment	55%		42%		0%		3%	
Effective problem solving skills	49%		49%		0%		3%	
Raised level of observations by carers	9%		52%		21%		18%	

These are the factors additionally suggested by participants from the first round of the Delphi study. Please also take the time to rate these factors as to how important you consider them to be in terms of being protective factors for self-injury, to be included in a needs assessment for self-injury. Thank you.

Protective factors for self-injury suggested by participants in round 1

Factor	Essential	Important	Don't know	Should not be included
Tolerance of negative emotions				
Development of alternatives				
Safe environments				
Consistent care plans				
Motivation to change behaviour				
Geographical proximity to support services and agencies				
In the service of society				
Coping mechanisms in place				
Positive self-appraisal				
Engages in cognitive self-checking				
Ability to address emotional expression difficulties				
Ability to develop coping strategies				
Strategies for positive self-image development				
Meaningful therapeutic alliance				
Awareness and insight into maladaptive schemas				
Opportunities to discuss feelings with others				
Positive body image				
Insight				
Lack of access to means of self-injury				
Strong feeling that self-injury is wrong				
Development of interests				
Non-judgemental attitude of carer/staff				
Structured environment				

Please continue to the second section of the Delphi study on the following page, thank you.

Attitude to self-injury questions

- Please find some suggested items to be used to understand attitudes towards engaging in self-injury
- The items also depict what their corresponding rating scale would be.
- The responses kindly offered in round one of the study have contributed to the questions depicted below
- To further refine this; please rate the value of the question to be included in such a measure using any mark in one of the five columns.
- At the end of the questions there is a section to make any further comments. Any feedback is gratefully appreciated.

	Proposed Question	Essential	Important	Unsure	Don't like	Definitely Should not be included
1	I enjoy taking care of my body..... *Definitely do not* *Definitely do* *1 2 3 4 5 6*					
2	Injuring myself has been a common behaviour for me in the past *Agree* *Disagree* *1 2 3 4 5 6*					
3	Injuring myself now would be easier than the first time I injured myself *Definitely* *Definitely not* *1 2 3 4 5 6*					
4	I have experienced substantial pain in the past (e.g. through violence, injury, accident, risk taking) *Definitely* *Definitely not* *1 2 3 4 5 6*					
5	I have a moral obligation not to injure myself *Disagree* *Agree* *1 2 3 4 5 6*					
6	Would you resent someone from					

	preventing you from injuring yourself? *Definitely* *Definitely not* *1 2 3 4 5 6*					
7	Injuring myself would provide relief from my current symptoms *Likely* *Unlikely* *1 2 3 4 5 6*					
8	Do you have an understanding of the reasons you injure yourself? *Definitely* *Definitely not* *1 2 3 4 5 6*					
9	Injuring myself would be *Pleasant* *Unpleasant* *1 2 3 4 5 6*					
10	People who are important to me understand why I injure myself *Unlikely* *Likely* *1 2 3 4 5 6*					
11	With regards to injuring myself I want to do what those who are important to me think I should do *Definitely* *Definitely not* *1 2 3 4 5 6*					
12	Would you describe yourself as a 'self-injurer or self-harmer' *Definitely* *Definitely not* *1 2 3 4 5 6*					
13	Rate the ease of self-injury for you.... *Easy* *Difficult* *1 2 3 4 5 6*					

14	Rate the strength of your intention to injure yourself in the next week... *Strong* *Weak* *1 2 3 4 5 6*					
15	Do you have any plans for how you would injure yourself *Definitely* *Definitely not* *1 2 3 4 5 6*					
16	I have positive things in my life *Disagree* *Agree* *1 2 3 4 5 6*					
17	Does the thought of trying to commit suicide make you feel..... *Relaxed* *Frightened* *1 2 3 4 5 6*					
18	Does injuring yourself fit with your personal values? *Definitely* *Definitely not* *1 2 3 4 5 6*					
19	Do you know the reasons behind your self-injury/thoughts of self-injury? *Definitely* *Definitely not* *1 2 3 4 5 6*					
20	Injuring myself would be *Reassuring* *Worrying* *1 2 3 4 5 6*					
21	Do you worry about the views others in terms of self-injury? *Definitely not* *Definitely*					

	1 2 3 4 5 6					
22	People around me think I should stop injuring myself *Definitely not* *Definitely* *1 2 3 4 5 6*					
23	It is in my control if I injure myself *Definitely* *Definitely not* *1 2 3 4 5 6*					
24	Have you found it easy to make decisions recently? *Definitely not* *Definitely* *1 2 3 4 5 6*					
25	I intend to injure myself *Definitely* *Definitely not* *1 2 3 4 5 6*					
26	After injuring yourself would you be more likely to feel..... *Relieved* *Guilty* *1 2 3 4 5 6*					
27	I have experienced substantial fear in the past (e.g. violence, injury, accident, risk taking) *Definitely* *Definitely not* *1 2 3 4 5 6*					
28	I feel part of a valued group of people (e.g. friends, family, colleagues, people around you) *Definitely not* *Definitely* *1 2 3 4 5 6*					
29	Have you found everything getting on top of you?					

	Definitely *Definitely not* *1 2 3 4 5 6*					
30	Do you see yourself as part of a group of people who self-injure? *Definitely* *Definitely not* *1 2 3 4 5 6*					
31	My current environment is having a .....impact on my thoughts about self-injury *Negative* *Positive* *1 2 3 4 5 6*					
32	I want support to explore other ways to cope with thoughts and emotions *Definitely not* *Definitely* *1 2 3 4 5 6*					
Please use this section to include any further comments about the measure, thank you.						

Summary of round one (participant 3) Definitions

What term do you prefer when discussing self-injury?

	Number of responses	%
Self-harm	12	37%
Self-injury	10	30%
Self-harm/self-injury	3	9%
Deliberate self-harm/non suicidal self-injury	2	6%
Deliberate self-harm or parasuicide	1	3%
Deliberate or intentional self-injury	1	3%
Non suicidal self-injury	1	3%
Seriously hurting self-1 3%		
Self-mutilation	1	3%
Deliberate self harm	1	3%
Deliberate self harm/parasuicide	1	3%

How would you define self injury?	
Themes identified in defining self injury: • Involves choice • Physical harm • Is purposeful • Is an organism response not limited to humans • Involves adverse effects • Without suicidal intent • Socially unacceptable • Injury to body tissue • Manipulation	• A planned act • Use of client language • Can involve unconscious motivation • A means of communication • Psychological damage • Emotional pain regulation • Is deliberate in nature • Evilness directed at self • Serves a function • Means of coping

Attitudinal questions

Q1. What questions could be used to determine whether an individual intends to engage in self injurious behaviour?

Themes identified:

- Past behaviour
- Current stressors
- Current emotions
- Thoughts
- Likelihood
- Timing
- Intention
- Response to stressors
- Readiness to act
- Immediacy in action
- Experience of urges
- Feelings of self-worth

Q2. What questions would be used to determine when, where and how the individual may carry out self-injurious behaviour?

Themes identified:

- Timing
- Vulnerability
- Thoughts
- Planning
- Intention to act
- Location
- Methods
- Imagination
- Functional assessment –SORC analysis

Q3. What questions could be asked to determine the individual's attitude to self-injury?

Themes identified:

- Motivation
- Function
- Attitude
- Positives
- Negatives
- Problematic
- Thoughts
- Typology
- Control

Q4. What questions could be used to determine how beneficial the individual thinks engaging in self-injury will be for them?

Themes identified

- Emotional experience
- Positive functions
- Trigger
- Alternatives
- Advantages
- Problem solving
- Immediacy

Q5. What questions could be used to determine how much emphasis the individual places on the views of family and friends about their self-injury?

Themes identified:

- Perceptions
- Thoughts of others
- Impact on individual
- Concern
- Guilt
- Disclosure

Q6. What questions could be used to determine how much emphasis the individual places on the views of those around them in relation to their self-injury?

Themes identified:

- What others say
- Perception of others
- Thoughts about others
- Value of important others
- Change
- Carer/staff views
- Societal views

Q7. What questions could be used to determine how easy or difficult the individual would find it to engage in self injury?

Themes identified:

- Interventions
- Successes
- Failures
- Motivation
- Time period without behaviour

- Ease
- Difficulty
- Trigger
- Intensity
- Hesitation
- Impulsivity

Q8. What questions could be asked to determine what the individual's perception is about the control they have over engaging in self injury?

Themes identified:

- Strength of intent
- Timing
- Delay
- Choice
- Control
- Change
- Ease

Q9. What questions could be asked to determine how the individual expects to feel if they were to engage in self injury?

Themes identified:

- Feelings
- Thoughts
- Individual function
- Reaction
- Trigger
- Expectations
- Imagination

Q10. What questions could be asked to determine what the individual's perception of the ease of engaging in self-injury is?

Themes identified:

- Timing
- Placement
- Mechanisms
- Difficulty
- Ease
- Comfortableness
- Decision
- Relief

Q11. What questions could be asked to determine how much control the individual perceives to have over engaging in self injury?

Themes identified:

- Emotional experience
- Emotional intensity
- Level of control
- Choice

Q12. What questions could be used to determine whether an individual sees themselves as belonging to a group of self injurers?

Themes identified:

- Mechanisms
- Perceptions of others
- Belonging
- 'Self-injurer/harmer'
- Benefits of group
- Peer group
- Secrecy
- Personal qualities

Q13. What questions could be used to determine what an individual's moral norms are in relation to self-injury?

Themes identified:

- Attitudinal direction
- Thoughts
- Tolerance
- Wrongness
- Society's perception
- Discrepancy
- Opinion
- Acceptability
- Approval
- Context

Q14. What questions could be used to determine whether an individual has engaged in self-injury in the past?

Themes identified:

- Intention

- Past behaviour
- Without intent to commit suicide

Q15. What questions could be used to determine what the individual feels about other people who self-injure?

Themes identified:

- Mechanism
- Support
- Perceptions of others
- Observations
- Trigger
- Thoughts
- Influence

Q16. Other questions which may be effective in assessing an individual's attitude or intention to self-injure?

Themes identified

- Rights
- Resentment of intervention
- Function
- Guarantee
- Other coping behaviours
- Care of body
- Others care of body
- Distraction strategies
- Self-soothing
- Thoughts
- Timing
- Decision

Section 6: Any other comments

1. **The topic of self-harm should be as part of a conversation between the therapist and client and should be explored with open rather than closed questions wherever possible, but a screening questionnaire could also be useful.**
2. **The setup is quite traditional and radical new thinking is needed to solve the problem. I think that existential thinking is of crucial importance here. Actually self-mutilation might be a way to claim the body as mine on an existential level, making the act constructive on a symbolic level – This is my body, I can do what I like with it. You must respect that!!! So don't force the patient in this direction by giving disrespect and low acceptance. Love is the key to healing. Not force.**

I also think it is important to ask about distraction strategies

Appendix 5: Group summary of data following round one of Delphi study

How do you manage strong emotions? (this is better I think than violence, and it also covers the idea that adolescents are beginning to feel things strongly, not just aggressive urges) How do others?

Delphi Round 3 (22 participants)

The percentages highlighted below indicate the proportion of participants who endorsed a particular rating for that item.

- Throughout this round please consider your current response in light of the group information you are provided.
- Your individual responses are highlighted in green. If you are happy with them you do not need to do anything. However if you want to change your response please put an 'X' in the box where you think it should now go.

- **Thank you very much in advance for your participation!**

Example response

Factor	Essential		Important		Don't know		Should not be included	
Mental illness	18%		82%		0%		0%	
Personality disorder	27%		73%	x	0%		0%	

Need/risk factors for self-injury

Factor	Essential		Important		Don't know		Should not be included	
Mental illness	18%		82%		0%		0%	
Personality disorder	27%		73%		0%		0%	
Learning disorder	5%		59%		31%		5%	
Childhood abuse**[1]	27%		63%		5%		0%	
Experience of negative emotions	41%		59%		0%		0%	
Experience of negative cognitions	32%		68%		0%		0%	
Low tolerance for distress	23%		77%		0%		0%	

Difficulty in communicating	40%		55%		5%		0%	
Difficulty in problem solving	36%		59%		5%		0%	
Experience of high stress levels	18%		82%		0%		0%	
Social isolation	9%		86%		5%		0%	
Has abused drugs	5%		82%		13%		0%	
Has abused alcohol	5%		82%		13%		0%	
Proximity to others self-injuring	0%		64%		18%		18%	
Factor	**Essential**		**Important**		**Don't know**		**Should not be included**	
Recent aggressive gestures towards others	9%		23%		41%		27%	
Access to self-injurious materials	14%		45%		14%		27%	
Recent arrival to a secure setting	9%		68%		18%		5%	
Verbal threat of self-injury made	9%		91%		0%		0%	
Family history of self-injury	5%		82%		13%		0%	
Previous suicide attempt	55%		45%		0%		0%	
Negative attitudes towards self-injury of care staff involved in the individuals' care.	4%		64%		14%		18%	
History of violence towards others	9%		18%		50%		23%	
Recent negative change in mood	22%		68%		5%		5%	
Recent negative change in behaviour	14%		55%		27%		4%	
Relapse of mental illness	9%		81%		5%		5%	
Noncompliance with psychotropic medication or relevant therapy	5%		68%		22%		5%	
Impulsivity	27%		73%		0%		0%	
Childhood trauma (any kind)	27%		59%		5%		9%	
Emotional instability	36%		55%		9%		0%	
Attachment	23%		41%		32%		4%	

problems								
Poor quality of life	10%		36%		36%		18%	
Low self-assessed mental health **[1]	14%		45%		27%		9%	
Low self esteem	41%		50%		5%		4%	
Lack of social support	18%		59%		14%		9%	
Dissociation	18%		55%		27%		0%	
Poor emotional self-expression	32%		54%		9%		5%	
Significant loss/grief	36%		36%		19%		9%	
Engagement in Sex Offender Treatment Programme	0%		9%		50%		41%	
Chronic illness	0%		18%		55%		27%	
Learned helplessness	14%		55%		13%		18%	
Unresolved emotional difficulties	36%		45%		14%		5%	
Maladaptive schemas	32%		41%		18%		9%	
Problematic interpersonal relationships	32%		45%		23%		0%	
High pain tolerance	0%		14%		36%		50%	
Negative body regard	5%		81%		5%		9%	
Self-hatred and high levels of shame**[1]	46%		41%		9%		0%	
Compulsivity**[2]	5%		46%		32%		9%	
Powerlessness**[2]	18%		64%		5%		5%	
Violent ideation**[2]	9%		36%		32%		14%	
Factor	**Essential**		**Important**		**Don't know**		**Should not be included**	
Hopelessness**[2]	32%		55%		0%		5%	
Social learning**[3]	0%		45%		23%		18%	
Features relating to borderline personality disorder.**[2]	32%		50%		5%		5%	
History of self-injury**[2]	59%		32%		0%		0%	

** Denotes a missing response, with the number highlighting the number of missing responses for the item.

Protective factors for self-injury

Factor	Essential	Important	Don't know	Should not be included
Has sought help for previous self-injury	41%	59%	0%	0%
Family/friends support system present	77%	23%	0%	0%
Significant positive intimate relationship	36%	64%	0%	0%
Connection to religion or spiritual understanding	0%	50%	27%	23%
Sustained participation in enjoyable/structured activities	9%	81%	5%	5%
Taking part in relevant treatment	68%	32%	0%	0%
Effective problem solving skills	59%	41%	0%	0%
Raised level of observations by carers	0%	68%	18%	14%
Tolerance of negative emotions	32%	68%	0%	0%
Development of alternatives	45%	55%	0%	0%
Safe environments	18%	73%	9%	0%
Consistent care plans	31%	59%	5%	5%
Motivation to change behaviour	50%	45%	5%	0%
Geographical proximity to support services and agencies	5%	55%	22%	18%
In the service of society	0%	9%	68%	23%
Coping mechanisms in place	41%	59%	0%	0%
Positive self-appraisal	23%	68%	9%	0%
Engages in cognitive self-checking	9%	64%	18%	9%
Ability to address emotional expression difficulties	32%	59%	9%	0%
Ability to develop coping strategies	59%	41%	0%	0%
Strategies for positive self-image development	31%	59%	5%	5%
Factor	**Essential**	**Important**	**Don't know**	**Should not be included**
Meaningful therapeutic alliance	36%	59%	0%	5%
Awareness and insight into maladaptive schemas	32%	63%	5%	0%
Opportunities to discuss feelings with others	18%	82%	0%	0%

Positive body image	5%		68%		18%		9%	
Insight	14%		68%		18%		0%	
Lack of access to means of self-injury	14%		32%		22%		32%	
Strong feeling that self-injury is wrong	5%		18%		41%		36%	
Development of interests	5%		63%		27%		5%	
Non-judgemental attitude of carer/staff	41%		41%		13%		5%	
Structured environment	14%		63%		14%		9%	

Please continue to the next page to complete your ratings in the same way for the attitudinal questions. Again, you will find your last responses highlighted in green, thank you!

Appendix 6: Round three information for Delphi study

	Proposed Question	Essential		Important		Unsure		Don't like		Definitely Should not be included	
1	I enjoy taking care of my body..... ***Definitely do not*** ***Definitely do*** ***1 2 3 4 5 6 7***	5%		41%		36%		18%		0%	
2	Injuring myself has been a common behaviour for me in the past ***Agree*** ***Disagree*** ***1 2 3 4 5 6 7***	63%		32%		0%		5%		0%	
3	Injuring myself now would be easier than the first time I injured myself ***Definitely*** ***Definitely not*** ***1 2 3 4 5 6 7***	36%		54%		5%		5%		0%	
4	I have experienced substantial pain in the past (e.g. through violence, injury, accident, risk taking)**[1] ***Definitely*** ***Definitely not*** ***1 2 3 4 5 6 7***	23%		32%		23%		18%		0%	
5	I have a moral responsibility not to injure myself ***Disagree*** ***Agree*** ***1 2 3 4 5 6 7***	9%		18%		32%		32%		9%	
6	Would you dislike it if someone prevented you from injuring yourself? ***Definitely*** ***Definitely not*** ***1 2 3 4 5 6 7***	18%		27%		23%		32%		0%	
7	Injuring myself would provide relief from my current symptoms ***Likely*** ***Unlikely*** ***1 2 3 4 5 6 7***	64%		27%		9%		0%		0%	
8	Do you have an understanding of the reasons you injure yourself? ***Definitely*** ***Definitely not*** ***1 2 3 4 5 6 7***	59%		32%		9%		0%		0%	
9	Injuring myself would be ***Pleasant*** ***Unpleasant*** ***1 2 3 4 5 6 7***	36%		41%		14%		9%		0%	
10	People who are important to me understand why I injure myself ***Unlikely*** ***Likely*** ***1 2 3 4 5 6 7***	32%		23%		36%		9%		0%	

Appendix 6: Round three information for Delphi study

	Proposed Question	Essential		Important		Unsure		Don't like		Definitely Should not be included	
11	With regards to injuring myself I want to do what those who are important to me think I should do ***Definitely*** ***Definitely not*** ***1 2 3 4 5 6 7***	9%		41%		22%		23%		5%	
12	Would you describe yourself as a 'self-injurer or self-harmer' ***Definitely*** ***Definitely not*** ***1 2 3 4 5 6 7***	18%		18%		23%		27%		14%	
13	Rate the ease of self-injury for you.... ***Easy*** ***Difficult*** ***1 2 3 4 5 6 7***	45%		45%		5%		5%		0%	
14	Rate the strength of your intention to injure yourself in the next week... ***Strong*** ***Weak*** ***1 2 3 4 5 6 7***	59%		27%		5%		9%		0%	
15	Do you have any plans for how you would injure yourself ***Definitely*** ***Definitely not*** ***1 2 3 4 5 6 7***	68%		27%		5%		0%		0%	
16	I have positive things in my life ***Disagree*** ***Agree*** ***1 2 3 4 5 6 7***	36%		55%		9%		0%		0%	
17	Does the thought of trying to commit suicide make you feel.....**[1] ***Relaxed*** ***Frightened*** ***1 2 3 4 5 6 7***	27%		36%		23%		5%		5%	
18	Does injuring yourself fit with your personal values?**[1] ***Definitely*** ***Definitely not*** ***1 2 3 4 5 6 7***	0%		32%		36%		27%		0%	
19	Do you know the reasons behind your self-injury/thoughts of self-injury? ***Definitely*** ***Definitely not*** ***1 2 3 4 5 6 7***	41%		55%		0%		4%		0%	
20	Injuring myself would be ***Reassuring*** ***Worrying*** ***1 2 3 4 5 6 7***	36%		32%		18%		14%		0%	

Appendix 6: Round three information for Delphi study

	Proposed Question	Essential		Important		Unsure		Don't like		Definitely Should not be included	
21	Do you worry about the views others in terms of self-injury? ***Definitely not*** ***Definitely*** ***1 2 3 4 5 6 7***	18%		50%		23%		9%		0%	
22	People around me think I should stop injuring myself ***Definitely not*** ***Definitely*** ***1 2 3 4 5 6 7***	14%		41%		32%		13%		0%	
23	It is in my control if I injure myself ***Definitely*** ***Definitely not*** ***1 2 3 4 5 6 7***	59%		36%		0%		5%		0%	
24	Have you found it easy to make decisions recently? ***Definitely not*** ***Definitely*** ***1 2 3 4 5 6 7***	9%		32%		41%		18%		0%	
25	I intend to injure myself ***Definitely*** ***Definitely not*** ***1 2 3 4 5 6 7***	59%		31%		5%		5%		0%	
26	After injuring yourself would you be more likely to feel..... ***Relieved*** ***Guilty*** ***1 2 3 4 5 6 7***	64%		27%		0%		9%		0%	
27	I have experienced substantial fear in the past (e.g. violence, injury, accident, risk taking)**[1] ***Definitely*** ***Definitely not*** ***1 2 3 4 5 6 7***	18%		27%		36%		14%		0%	
28	I feel part of a valued group of people (e.g. friends, family, colleagues, people around you) ***Definitely not*** ***Definitely*** ***1 2 3 4 5 6 7***	9%		73%		0%		18%		0%	
29	Have you found everything getting on top of you? ***Definitely*** ***Definitely not*** ***1 2 3 4 5 6 7***	18%		55%		18%		9%		0%	
30	Do you see yourself as part of a group of people who self-injure? ***Definitely*** ***Definitely not*** ***1 2 3 4 5 6 7***	9%		59%		14%		18%		0%	

Appendix 6: Round three information for Delphi study

	Proposed Question	Essential		Important		Unsure		Don't like		Definitely Should not be included	
31	My current environment is having a .....impact on my thoughts about self-injury ***Negative*** ***Positive*** ***1 2 3 4 5 6 7***	27%		54%		5%		14%		0%	
32	I want support to explore other ways to cope with thoughts and emotions ***Definitely not*** ***Definitely*** ***1 2 3 4 5 6 7***	54%		41%		0%		5%		0%	

Please use this section to add any further comments:

Thank you very much for your time and your participation!

Appendix 7: Blank SORC

SORC PROFORMA **Research**

number_____

Antecedents **Behaviour** **Consequences**

Setting Conditions (S)

Response Stimuli (R)

Consequences(C)

Organism Variables (O)

Functions

Appendix 8: Example SORC

SORC PROFORMA EXAMPLE **Research number**_____

Antecedents

Setting Conditions (Triggers)

Events
Being alone

External settings
Prison/hospital
Bathroom – safe and clean

Internal settings
Confused, overwhelmed, anger, disappointment, scared, stressed (shopping trolley full)

Behaviour

Response Stimuli (Behaviour)

Thoughts
'Do it wide enough to spend time out of hospital'.
'How will I get my CD/razor, how will I do it, what size do I need'?
'What will people say'?

Behaviour: To make a deep cut with CD and then buzz staff.

Physiological/body signs:
Warm and fuzzy, fuzzy mind

Consequences

Consequences(C)

- Mum and friends angry and upset
- I feel relieved and happy
- I feel sad knowing others reactions
- Staff gave me attention, make me feel wanted and could talk to someone about my emotions, feelings and whys.
- Hospital gives me a breather away from here
- Don't get acknowledged by accident and emergency staff
- Day after ashamed of self-harm because of others.
- Get a break from my emotions.

Organism Variables

Being bullied (mentally & physically)
Learning disability
Been hurting myself since 14
Tried to commit suicide at 15
Chaotic family life
Saw another young person self-injure – seemed happy

Functions

- To control emotions
- As a coping response to a secure environment
- To get support/help from others
- To get a break from hospital

RESEARCHER TO READ OUT TYPE NOT IN BOLD

Introduction

This discussion will explore with you an incident of self-injury that you have engaged in and also a time where you were at risk of self-injury but did not carry out the behaviour. We will be asking in particular for a summary of what you think:

- Led up to the incident
- Happened before the incident
- Happened during the incident.
- Happened after the incident
- Why the incident occurred

It is hoped that this will provide some useful information on why the incident occurred as opposed to just looking at what happened.

If you feel that you do not want to discuss an incident of self-injury, please just say. You do not have to give a reason. You can also end this interview at any time, again you do not have to give a reason.

RESEARCHER TO SHOW PATIENT WHAT A BLANK SORC PROFORMA LOOKS LIKE AND TO BRIEFLY TALK THROUGH EACH SECTION

This discussion will go through with you each section to gather some information on what you experienced.

Completing the SORC proforma

RESEARCHER TO COMMENCE WITH 'BEHAVIOR' SECTION

We will start first by looking at the 'behaviour' section.

RESEARCHER TO COVER THESE AREAS:

- **How would you describe what happened?**
- **What type of self-injury did you engage in/how did you hurt yourself?**
- **What did you notice happening in your body at the time you injured yourself?**

- **What thoughts went through your head at the time?**

RESEARCHER TO EXAMINE 'SETTING CONDITION' SECTION

We will now explore what you think happened before this incident.

RESEARCHER TO COVER THESE AREAS:

- **What was happening immediately before this incident?**
- **Had anything happened that you think triggered you hurting yourself?**
- **How would you describe your mood in the lead up to injuring yourself?**
- **What was going through your head in the lead up to injuring yourself?**
- **What happened prior to this incident – what type of 'build-up' was there?**
- **Where did the incident take place?**

RESEARCHER TO EXAMINE 'CONSEQUENCES' SECTION

We will now explore what you think happened after this incident.

RESEARCHER TO COVER THESE AREAS:

- **What happened immediately after this incident?**
- **What happened sometime after this incident?**
- **How did you feel immediately after the incident?**
- **What were your thoughts after the incident?**
- **How did other staff respond after the incident?**
- **What effect did the incident have on others?**
- **What would you describe as the consequences of you hurting yourself on this occasion?**

RESEARCHER TO EXAMINE 'ORGANISM VARIABLES' SECTION

We will now explore what you think contributed to this incident..

RESEARCHER TO COVER THESE AREAS:

- **What factors made it easier for this incident to take place?**
- **What factors from your history make it more likely that you will hurt yourself? e.g. learning history, personality disorder, mental illness, beliefs, prior history of self-injur**y

RESEARCHER TO EXAMINE 'FUNCTION' SECTION.

Looking at this incident as a whole, we are interested in why you think it happened?

RESEARCHER TO COVER THESE AREAS:

- **What was the main reason for this incident?**
- **Why do you think you injure yourself?**
- **What motivates you to injure yourself?**

THIS PROCESS IS THEN COMPLETED A SECOND TIME FOR AN INCIDENT WHERE THE PATIENT WAS AT RISK OF INJURING THEMSELVES BUT DID NOT CARRY OUT THE BEHAVIOUR.

Ending the discussion

Thank you for taking the time to discuss these incidents. Is there anything that you would like to add?

INTERVIEWER TO CONCLUDE THE INTERVIEW BY ASKING THE PATIENT ABOUT GENERAL ISSUES TO DISTRACT FROM THE CONTENT OF THE INTERVIEW E.G WHAT ARE THEIR PLANS FOR THE REST OF THE DAY, WHAT OT ARE THEY ATTENDING AT THE MOMENT.

Research title: The development of attitudinal questions and understanding of risk and protective factors for self-injurious behaviour within forensic settings

RC information sheet

EXPOLORING INCIDENTS OF SELF INJURY

Introduction

Research into self-injury within a secure hospital or prison setting has tended to focus on individual and historical characteristics associated with the behaviour. Research examining individual characteristics has focused on areas such as personality (Haw, Horton, Houston & Townsend, 2001), and mental illness (Palmer & Connelly, 2005). There has also been research into historical factors, and their influence on behaviour in areas such as a history of childhood abuse (Santa Mina & Gallop, 1998) and substance use (Suominen, Isometsa, Haukka & Lonnquvist, 2004). Other individual variables have also been researched, with self-esteem and personality being linked to self-injurious behaviour in particular (Beautrais, Joyce & Mulder, 1999).

There has been limited research, however, on environmental factors such as the attitudes of others towards self-injurious behaviour (i.e. social environmental factors). The research that has been completed has placed focus on the attitudes of members of staff as part of the social context (e.g. Ireland & Quinn, 2007), but this has been limited in scope. A further potentially important risk factor that has not been studied is the attitudes and beliefs of those actually engaging in self-injurious behaviour.

In terms of identifying the variables involved in the perpetration of self-injury, there is currently no comprehensive measure available which provides an informed assessment of the risk of an individual engaging in this behaviour and what their needs may be in terms of managing this risk. The above research indicates that in order to be comprehensive such a measure should consider aforementioned factors such as history of self-injury, individual factors (such as personality and experience of psychological distress), environmental factors, attitudes of other and attitudes of the individual in terms of engaging in self-injury. The importance of understanding the risk factors involved in self-injury is not only in assessing the potential harm a person may cause themselves, but also the effect that treatment and intervention may have; and in understanding the individual's protective factors in terms of those factors which may take them away from self-injurious behaviour. Whilst some risk factors may be static in nature, others are

dynamic (such as attitudes) and will change over time. These are important in guiding professionals in terms of supporting the individual and offering appropriate treatment.

The proposed study has three core aims. The first aim is to further explore attitudes towards self-injury of the people engaging in the behaviour. Second, to explore motivations for engaging in self-injurious activity. Third to explore the risk and protective factors for self-injury structured assessment. A fourth subsidiary aim is to explore the intrinsic characteristics considered relevant to understanding self-injurious behaviours.

About the research

Cheswold Park Hospital is conducting research in conjunction with the University of Central Lancashire into patient and staff attitudes towards self-injury and why it takes place. The research is part of the researchers PhD and is being supported by Cheswold Park Hospital.

The research is split into two parts (part 1 and part 2). In stage one a comprehensive literature review will be conducted and an assessment of official records (in the form of incident reports) will be carried out. Records will be randomly selected. In stage two short interviews will be carried out with staff and patients.

Part 1

Participants: Consent will be required from a minimum of 15 patients to access their incident report history from 2008-2011. Responsible Clinicians will be asked to identify from their case load, patients who have a history of self-injury, all participants will then be randomly selected from this list. **Patients will only be seen at this point in order to obtain consent to access their records, and this will only be carried out if consent to approach them has been given by their Responsible Clinician.**

Assessments: Incident reports will be examined using a functional assessment, a SORC form (Lee-Evans, 1994). This will record the triggers (S: Setting conditions), organism variables (O: e.g. personality disorder, mental illness), response variables (R: behaviour) and consequences (C) associated with each incident.

Part 2a & b

Participants: Consent will be required from a minimum of 15 members of staff and a minimum 15 patients to take part in this stage of the research. Responsible Clinicians will be asked to identify from their case load, patients who have a history of self-injury, all participants will be randomly selected from this list. Members of staff will be selected at random. **Patients will only be approached to take part in this phase of the research if consent to approach them for this phase has been given by their Responsible Clinician.**

*Assessments***:** Participants will be asked to take part in a brief discussion taking approximately 30 minutes to complete an example of self-injurious behaviour that they have engaged in (patients) or witnessed (staff) using a SORC assessment (Lee-Evans, 1994). A SORC form will be used to obtain a consistent outline of self-injurious incidents since this is an accepted method of collecting behavioural data where the focus is on determining motivation (i.e. function).

Who is doing the research?

The individual carrying out the research is Charlotte York (Forensic Psychologist in Training, Cheswold Park Hospital).

The research is supervised by;

- **Director of studies**: Professor Jane L. Ireland (University of Central Lancashire and Psychological Services, Ashworth Hospital)
- Professor John Archer (Department of Psychology, University of Central Lancashire)

Consenting to take part

Patients will not be invited to take part in the research without prior consent from their RC. Following RC consent patients will be approached and invited to take part. Patients will be provided with an information sheet and given time to consider whether or not they wish to engage in the research.

Anonymity

All patients who take part will be given a 'research number' which will appear on the information that will be collected by the researcher instead of their name. Only the researcher will know which number matches to which name. The information collected is purely for research purposes. Patients will not be identified in any formal write up of the results, it is totally anonymous.

Exceptions to anonymity

Information provided by patients during the consent or data collection process may be disclosed to staff if it includes anything indicating a threat to others e.g. if they report information about a previously unreported crime or about a possible or future crime this information will be disclosed to staff. Information would also be disclosed to staff if the researcher considered that the patient posed a current threat to themselves, for example if they report they will harm themselves. No information will be disclosed to other patients.

Patients will also be asked if they would like the details of their functional assessment shared with their clinical team. If they consent to this then the details collected from this process will be shared with their clinical team. This is totally voluntary for the patient.

Security of information obtained

All copies of research information will be held by the researcher. They will be kept secure in a locked filing cabinet. Cheswold Park Hospital or NHS ethics may audit the information held (e.g. checking that the research team have written consent from everyone who has agreed to take part), but this is focused on protecting research participants and checking that researchers have completed everything that they have agreed to.

Further information

Further information on this study can be obtained at any time from the following:

Charlotte York
Psychological Services
Cheswold Park Hospital

Version 1 April 2011

RESEARCH CONSENT FORM (PATIENT'S RC) V1/April 2011

Research title: The development of attitudinal questions and understanding of risk and protective factors for self-injurious behaviour within forensic settings

PART 1: Exploring records for incidents of self-injury

Name of Researcher: Charlotte York

Part 2 - RC

I RC

to:.....

hereby give my approval to the involvement of the above-named patient in the research project conducted by **Psychological Services, Cheswold Park Hospital and the University of Central Lancashire**. I have received a written explanation of the study and I am also satisfied that the participant is capable of giving his/her consent for his/her involvement in the study.

Signed..... .....

Date.....

Version 1 April 2011

Research title: The development of attitudinal questions and understanding of risk and protective factors for self-injurious behaviour within forensic settings

PART ONE (A): Looking at records for cases of self-injury

Information for patients

Introduction

Research into self-injury in places like a secure hospital has mostly looked at things like personality and whether the person has hurt themselves before. There has not been very much research on things like whether the beliefs of other people might affect a person hurting themselves. Some research has looked at whether the beliefs of members of staff affects a person but this has only been looked at in one study.

Another area which has not been looked at are the beliefs of the person who does hurt themselves. This research hopes to look at why self-injury happens and to use the views of patients to help understanding. It is really important to get the views of patients about their self-injury.

About the research

Cheswold Park Hospital is doing research along with the University of Central Lancashire, into your beliefs about self-injury and why it happens. It is also looking at the things which might put people at risk of hurting themselves and also any things which mean that a person makes the choice not to hurt themselves. The research is part of my PhD (university course) and Cheswold Park is helping me to do this.

The study is split into two parts (part 1 (a & b) and part 2). **You are being asked to take part in Part 1a .** Part 1a will look at incident forms. It will be looking at your records only. You are not being asked to take part in any interview of any kind.

Who is doing the research?

The person doing the research is Charlotte York (Forensic Psychologist in Training, Cheswold Park Hospital).

The research is supervised by;

- **Director of studies**: Professor Jane L. Ireland (University of Central Lancashire)
- Professor John Archer (Department of Psychology, University of Central Lancashire)

Part 1a: What will happen in this part of the research?

At least 15 patients will be asked to take part in this part of the research and all patients will be randomly selected (so all patients have the same chance of being asked if they would like to take part). The following steps will happen;

1. Responsible clinicians will be asked to give consent to speak to patients
2. Patients will be shown this information sheet and have the study explained to them, to think about whether they would like to take part in the research. This will take about 30 minutes.
3. Patients will be given a week to think about whether they would like to take part
4. If patients would like to take part, they will sign a consent form.
5. When the study is finished, patients will be given a handout about what the research found.

What will the research do with my records?

Patients are being asked to consent to me having access to your hospital records to look at the following information;

- Your incident records from 2008-2011
- Information about your self-injury history
- Information on your early life (e.g. childhood, schooling) to see what things might have led to you hurting yourself.

This information will be used to look at;

- What led up to you hurting yourself (just before you did it and maybe things in your past)
- What happened as you hurt yourself
- What happened after you hurt yourself
- Why you think it happened

It is hoped that this will give us some helpful ideas about <u>why</u> people hurt themselves rather than just looking at the fact that people do hurt themselves. You are not being asked to speak to me about your self-injury at this point, just for me to be able to see your records.

Consenting to take part

You don't have to take part in this study. If you agree to take part and then change your mind you can just let us know. You just need to let us know within six weeks of

agreeing to take part so that we can make sure that we can take you out of the research. After this time the information that you provide will be made anonymous and we would not be able to pull out your individual information.

You don't have to agree now. I will agree a time to come back to speak to you to see whether you would like to take part.

Making sure your information is anonymous

Everyone who takes part will be given a 'research number' which will be on the information collected instead of your name. Only I will know which number matches to which name. I will keep a list which will be destroyed once I have finished the research. No one will know that any of the information is yours.

When things are not anonymous?

If, whilst taking part in this research, you say something which is a threat to other people (for example a crime which you have committed which has been unreported, or that you plan to carry out a crime) this will be passed on to staff. Also if I think that you pose a current risk of harm to yourself (like telling me that you plan to hurt yourself) this will be passed on to staff. You are not asked to talk about either of these things within the research, so please be aware that if you did it would be passed onto staff. None of your information will be talked about with other patients.

Where the information is kept?

All copies of research information will be kept by me. They will be kept secure in a locked filing cabinet. Cheswold Park Hospital or NHS ethics may look at the information held (for example to check whether everyone has given written consent), but this is to protect people who take part and to check I have done everything that I have agreed to do.

Further information

If you would like any more information, please speak to;
Charlotte York
Psychological Services
Cheswold Park Hospital

If you have any worries you do not wish to speak to the researcher about, you should contact your care co-ordinator and/or the patients' complaints department who will let you know what to do.

Version 2 August 2011

RESEARCH CONSENT FORM (PATIENT'S COPY)V1/April 2011

Name of Patient: _____NHS No:_____

Research No:_____

Research title: The development of attitudinal questions and understanding of risk and protective factors for self-injurious behaviour within forensic settings

PART 1 (A): Exploring records for incidents of self-injury

Name of Researcher:*Charlotte York*

Part 3: Patient

I have read and understood the information sheet dated **August 2011 (v2)** for the above study and have had opportunity to ask questions. I also understand that I do not have to agree immediately, but I can consider the information that I have received and ask the researcher to come and see me at a later date

..... (Patient's initial)

I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, without my medical care or legal rights being affected.

.....(Patient's initial)

I understand that no personal information obtained during the course of the study relating to myself will be disclosed to other patients.

..... (Patient's initial)

I understand that all information relating to myself obtained as part of the study will remain anonymous to those outside of the research team, and that I will not be personally identified in the final report of the study.

..... (Patient's initial)

I understand that this consent form may be seen, however, by responsible individuals from Cheswold Park Hospital for the purposes of monitoring research procedures. I understand that this is for audit purposes only to ensure that my consent has been sought.

..... (Patient's initial)

I agree to be involved in the study carried out by **Psychological Services, Cheswold Park Hospital and the University of Central Lancashire** and I am satisfied that the purpose and procedures of the study have been fully explained to me by

.....*(Researcher)*

Signed..... (Patient)
Date.....

Signed..... (Researcher)
Date.....

Version 1 April 2011

Research title: The development of attitudinal questions and understanding of risk and protective factors for self-injurious behaviour within forensic settings

PART TWO (A): Talking to patients about their views about why they have injured themselves

Information for patients

Introduction

Research into self-injury in places like a secure hospital has mostly looked at things like personality and whether the person has hurt themselves before. There has not been very much research on things like whether the beliefs of other people might affect a person hurting themselves. Some research has looked at whether the beliefs of members of staff affects a person but this has only been looked at in one study.

Another area which has not been looked at are the beliefs of the person who does hurt themselves. This research hopes to look at why self-injury happens and to use the views of patients to help understanding. It is really important to get the views of patients about their self-injury.

About the research

Cheswold Park Hospital is doing research along with the University of Central Lancashire, into your beliefs about self-injury and why it happens. It is also looking at the things which might put people at risk of hurting themselves and also any things which mean that a person makes the choice not to hurt themselves. The research is part of my PhD (university course) and Cheswold Park is helping me to do this.

The study is split into two parts (part 1 and part 2 (a&b)). **You are being asked to take part in Part 2a**. Part 1a has already been done (part 1a looked at the incident records of 15 patients).The study that you are being asked to take part in asks for you to give your views as to why you may have injured yourself before.

Before you think about taking part in 2a, it is important that you take time to read the rest of this sheet.

Who is doing the research?
The person doing the research is Charlotte York (Forensic Psychologist in Training, Cheswold Park Hospital).

The research is supervised by;

- **Director of studies**: Professor Jane L. Ireland (University of Central Lancashire)
- Professor John Archer (Department of Psychology, University of Central Lancashire)

Part 2a: What will happen in this part of the research?
At least 15 patients are being asked to take part in part 2a and these patients have been randomly selected. 15 members of staff are also being asked for their views on an incident of patient self-injury that they have seen. The following steps will happen;

1. Responsible clinicians will be asked to give consent to speak to patients
2. Patients will be shown this information sheet and have the study explained to them, to think about whether they would like to take part in the research. This will take about 30 minutes.
3. Patients will be given a week to think about whether they would like to take part.
4. If patients would like to take part, they will sign a consent form.
5. I will arrange a time to come and speak with patients about a time when they hurt themselves. This will take between 30 to 45 minutes.
6. I will ask patients if they would like this information to be passed onto their clinical team (patients do not have to agree to this).
7. When the study is finished, patients will be given a handout about what the research found.

What you will be asked to talk about?
If you agree to take part I will speak with you for about 30-45 minutes about a time when you injured yourself. You will be asked to talk about;

- What happened before you hurt yourself
- What happened as you hurt yourself
- What happened after you hurt yourself
- Why you think you hurt yourself.

It is hoped that this will give us some helpful ideas about <u>why</u> people hurt themselves rather than just looking at the fact that people do hurt themselves.

Some people find it difficult to talk about hurting themselves, but many people also feel better after they have talked about it to someone who listens. I have worked with lots of people who have hurt themselves, and if you do find what we talk about difficult I can pass this onto your clinical team (if you consent to this) in order for you to receive further support.

Consenting to take part

You don't have to take part in this study. If you agree to take part and then change your mind you can just let us know. You just need to let us know within six weeks of agreeing to take part so that we can make sure that we can take you out of the research. After this time the information that you provide will be made anonymous and we would not be able to pull out your individual information.

You don't have to agree now. I will agree a time to come back to speak to you to see whether you would like to take part.

Making sure your information is anonymous

Everyone who takes part will be given a 'research number' which will be on the information collected instead of your name. Only I will know which number matches to which name. I will keep a list which will be destroyed once I have finished the research. No one will know that any of the information is yours.

When things are not anonymous

If, whilst taking part in this research, you say something which is a threat to other people (for example a crime which you have committed which has been unreported, or that you plan to carry out a crime) this will be passed on to staff. Also if I think that you pose a current risk of harm to yourself (like telling me that you plan to hurt yourself) this will be passed on to staff. You are not asked to talk about either of these things within the research, so please be aware that if you did it would be passed onto staff. None of your information will be talked about with other patients.

You will also be asked if you would like what we talk about to be shared with your clinical team. If you consent to this then I will pass on the information that we talked about to your clinical team. <u>You do not have to agree to this – it is your choice</u>.

Where the information is kept?

All copies of research information will be kept by me. They will be kept secure in a locked filing cabinet. Cheswold Park Hospital or NHS ethics may look at the information held (for example to check whether everyone has given written consent), but this is to protect people who take part and to check I have done everything that I have agreed to do.

Further information

If you would like any more information, please speak to;

Charlotte York
Psychological Services
Cheswold Park Hospital

If you have any worries you do not wish to speak to the researcher about, you should contact your care co-ordinator and/or the patients' complaints department who will let you know what to do.

Version 2 August 2011

RESEARCH CONSENT FORM (PATIENT'S COPY)V1/April 2011

Name of Patient:_____ NHS No:_____ Research No:_____

Research title: The development of attitudinal questions and understanding of risk and protective factors for self-injurious behaviour within forensic settings

PART 2 (A): Exploring patients views of incidents of self-injury

Name of Researcher:*Charlotte York*

Part 3: Patient

I have read and understood the information sheet dated **August 2011 (v2)** for the above study and have had opportunity to ask questions. I also understand that I do not have to agree immediately, but I can consider the information that I have received and ask the researcher to come and see me at a later date

..... (Patient's initial)

I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, without my medical care or legal rights being affected.

.....(Patient's initial)

I understand that no personal information obtained during the course of the study relating to myself will be disclosed to other patients.

..... (Patient's initial)

I understand that all information relating to myself obtained as part of the study will remain anonymous to those outside of the research team, and that I will not be personally identified in the final report of the study. I understand that if I report information that indicates a threat to others e.g. if I disclose a previously unreported crime or future crime this information would be disclosed to staff. I also understand that information would be disclosed to staff if the researcher considered that I pose a threat to myself.

..... (Patient's initial)

I understand that this consent form may be seen, however, by responsible individuals from Cheswold Park Hospital for the purposes of monitoring research procedures. I understand that this is for audit purposes only to ensure that my consent has been sought.

..... (Patients initial)

I agree to be involved in the study carried out by **Psychological Services, Cheswold Park Hospital and the University of Central Lancashire** and I am satisfied that the purpose and procedures of the study have been fully explained to me by

.....*(Researcher)*

Signed..... (patient)
Date.....

Signed..... (researcher)
Date.....

Version 1 April 2011

Research title: The development of attitudinal questions and understanding of risk and protective factors for self-injurious behaviour within forensic settings

PART TWO (B): Exploring staff views about incidents of self-injury

Information for staff

Introduction

Research into self-injury in places like a secure hospital has mostly looked at things like personality and whether the person has hurt themselves before. There has not been very much research on things like whether the attitudes of other people might affect a person hurting themselves. Some research has looked at whether the attitudes of members of staff affects a person but this has only been looked at in one study.

Another area which has not been looked at is the attitude of the person who does hurt themselves. This research hopes to look at why self-injury happens and to use the views of patients to add to understanding of the behaviour. It is really important to get the views of patients about their self-injury. It is also important to get the views of the people who care for those engaging in self-injury.

About the research

Cheswold Park Hospital is conducting research with the University of Central Lancashire, into your attitudes towards self-injury and why it takes place. It is also looking at the things which might put people at risk of hurting themselves and also any things which mean that a person makes the choice not to hurt themselves. The research is part of the researchers PhD and is being supported by Cheswold Park Hospital.

The study is split into two parts (part 1 and part 2(a & b)). You are being asked to take part in Part 2b. Part 2a has already been completed (It explored the incident records of 15 patients).The study that you are being asked to take part in asks you to give your views about some of the incidents of self-injury that you have witnessed. Patients are also being asked to give their views in terms of some of the incidents of self-injury they have been involved in.

Before you consider taking part in study 2b it is important that you take the time to read the following information.

Who is doing the research?
The individual carrying out the research is Charlotte York (Forensic Psychologist in Training, Cheswold Park Hospital).

The research is supervised by;

- **Director of studies**: Professor Jane L. Ireland (University of Central Lancashire and Psychological Services, Ashworth Hospital)
- Professor John Archer (Department of Psychology, University of Central Lancashire)

Part 2b: What will happen in this part of the research?
A minimum of 15 patients are being invited to take part in part 2b and these patients have been randomly selected. 15 members of staff are also being approached to ask for their views on an incident of patient self-injury that they have witnessed. Staff have been randomly selected and only qualified nursing staff are being approached. The following steps will happen in the research;

1. 15 Qualified staff will be selected at random.
2. These staff will be given this information sheet by me to read through and discuss if they would like to. This should take approximately 15 minutes.
3. The member of staff will be given a week to think about whether they would like to take part.
4. If the member of staff would like to take part, they will be asked to sign a consent form.
5. I will agree a time convenient to come back and discuss with the member of staff about a time where they witnessed an incident of self-injury. This will take about 30 minutes.
6. When the study is completed both staff and patients will be given a handout about what the study found.

What you will be asked to talk about?
If you agree to take part you will be invited to engage in a brief discussion with the researcher to explore one incident of patient self-injury that you have witnessed. You will not be asked to identify who was involved – the researcher is interested in the incident itself. The researcher will be asking for a summary of what you think in terms of;

- What led up to the incident
- What happened before the incident
- What happened during the incident
- What happened after the incident
- Why the incident occurred

It is hoped that this will provide some useful information on why the incident occurred as opposed to just what happened.

Some people find that talking about self-injury is an emotionally difficult topic. If you do find this to be the case during the process of the discussion, please let me know so that support can be arranged for you.

Consenting to take part

You don't have to take part in this study. If you agree to take part and then change your mind you can just let us know, as long as you let us know within six weeks of agreeing so that we can make sure that we can take you out of the sample. The information that you provide will be anonymised and it will not be possible for us to locate your information after six weeks.

You don't have to agree now. I will agree a time to come back to speak to you should you decide that you would like to think about taking part.

Anonymity

Everyone who takes part will be given a 'research number' which will appear on the information collected instead of your name. Only I will know which number matches to which name. I will keep a list which will be destroyed once I have finished the research. No one will know that any of the information is yours.

Security of information obtained

All copies of research information will be held by the researcher. They will be kept secure in a locked filing cabinet. Cheswold Park Hospital or NHS ethics may audit the information held (e.g. checking that the research team have written consent from everyone who has agreed to take part), but this is focused on protecting research participants and checking that researchers have completed everything that they have agreed to.

Further information

Further information on this study can be obtained at any time from the following:

Charlotte York
Psychological Services
Cheswold Park Hospital

If you have any concerns about the research that you do not wish to speak with the researcher about directly, you should contact the research lead within Cheswold Park Hospital and discuss your concerns with them. The research lead will raise any concerns within the hospital clinical governance.

Version 2 August 2011

RESEARCH CONSENT FORM (STAFF COPY)V1/April 2011

Name of Staff:_____ Ward:_____ Research No:_____

Research title: The development of attitudinal questions and understanding of risk and protective factors for self-injurious behaviour within forensic settings

PART 2 (B): Exploring staff views of incidents of self-injury

Name of Researcher:*Charlotte York*

Part 1: Staff

I have read and understood the information sheet dated **August 2011 (v2)** for the above study and have had opportunity to ask questions. I also understand that I do not have to agree immediately, but I can consider the information that I have received and ask the researcher to come and see me at a later date

..... (Staff initial)

I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, with no negative consequences to myself.

.....(Staff initial)

I understand that all information relating to myself obtained as part of the study will remain anonymous to those outside of the research team, and that I will not be personally identified in the final report of the study.

..... (Staff initial)

I understand that this consent form may be seen, however, by responsible individuals from Cheswold Park Hospital for the purposes of monitoring research procedures. I understand that this is for audit purposes only to ensure that my consent has been sought.

..... (Staff initial)

I agree to be involved in the study carried out by **Psychological Services, Cheswold Park Hospital and the University of Central Lancashire** and I am satisfied that the purpose and procedures of the study have been fully explained to me by

.....*(Researcher)*

Signed.....(Staff)

Date.....

Signed.....(Researcher)

Date.....

Version 1 April 2011

RESEARCH CONSENT FORM (PATIENT'S RESPONSIBLE CLINICIAN) V2/April 2013

Patient Name:_____ Hospital No:_____
Research Title: Developing a means of assessing and managing risk for deliberate self-harm and suicide in a high risk psychiatric population.
Lead Researcher: Professor Jane L. Ireland

I ……..... Responsible Clinician

to: .....

hereby give my approval to the involvement of the above-named patient in the above research conducted by **Ashworth Hospital and the University of Central Lancashire**. I have received a written explanation of the research and I am also satisfied that the patient is capable of giving his consent for his involvement in the research.

Signed: ..... **Date:** .....

Research Title: Developing a means of assessing and managing risk for deliberate self-harm and suicide in a high risk psychiatric population.

INFORMATION SHEET – PATIENTS

PART 1: Looking at records for cases of deliberate self-harm (DSH).

Background to the research

There is currently little research regarding factors that can affect the likelihood that a patient will engage in self-harm or suicidal behaviour. This research hopes to look at why self-injury happens, and to use the views of patients to add to a self-injury questionnaire. It is really important to get the views of patients about their self-injury and suicidal behaviour. Ultimately, we hope to develop a tool for the formal evaluation of risk for self-harm and attempted suicide. The research will also inform the training of nursing staff and aim to influence the development of healthcare policy regarding self-harm and suicide prevention in mental health facilities.

About the research

Ashworth Research Centre (ARC) based at Ashworth High Secure Hospital is carrying out research along with the University of Central Lancashire, into your beliefs about self-injury and why it happens. It is also looking at the things which might put people at risk of hurting themselves and also any things which mean that a person makes the choice not to hurt themselves. The research data will be used as part of a PhD by Charlotte York, who is a postgraduate student at the University of Central Lancashire.

The study is split into two phases. **You are being asked to take part in Part 1.** Charlotte York will only have the anonymised data and will not know your name or hospital number. Part 1 will look at incident forms. It will be looking at your records only. You are not being asked to take part in any interview of any kind.

Who is doing the research?

The ARC (Ashworth Research Centre) team including Professor Jane L. Ireland, Dr Carol A. Ireland, Chris Duffy, and Charlotte York.

Part 1: What will happen in this phase of the research?

At least 30 patients will be asked to take part in this phase of the research and all patients will be randomly selected so all patients have the same chance of being asked if they would like to take part. The following steps will happen;

1. You will be shown this information sheet and have the study explained to you. This will take about 15 minutes.
2. You will be given a week to think about whether you would like to take part.
3. If you would like to take part, you will be asked to sign a consent form.
4. When the study is finished, you will be given a handout about what the research found.

What will the researchers do with my records?
You are being asked to consent to the research team having access to your hospital records to look at the following information;

- Your incident records at the hospital.
- Information about your self-injury history and suicidal behaviour history.

This information will be used to look at;

- What led up to you hurting yourself (just before you did it and maybe things in your past).
- What happened as you hurt yourself.
- What happened after you hurt yourself.
- Consequences.

It is hoped that this will give us some helpful ideas about <u>why</u> people choose to hurt themselves. You are not being asked to speak about your self-injury or suicidal behaviour at this point, just for the researchers to be able to see your records.

Consenting to take part
You don't have to take part in this study. If you agree to take part and then change your mind you can just let us know. You just need to let us know within six weeks of agreeing to take part so that we can make sure that we can take you out of the research. After this time the information that you provide will be made anonymous and we would not be able to pull out your individual information. You don't have to agree now. A member of the research team will agree a time to come back to speak to you to see whether you would like to take part.

Anonymity
Everyone who takes part will be given a 'research number' which will be on the information collected instead of your name. Only the research team will have access to the names. This list will be destroyed once the research is completed. No one will know that any of the information is yours.

When things are not anonymous
If, whilst taking part in this research, you say something which is a threat to other people (for example a crime which you have committed which has been unreported, or that you plan to carry out a crime) this will be passed on to staff. Also if a member of the research team think that you pose a current risk of harm to yourself (like disclosing you plan to hurt

yourself) this will be passed to staff. You are not asked to talk about either of these things within the research, so please be aware that if you did it would be passed onto staff. None of your information will be talked about with other patients.

You will also be asked if you would like what we talk about to be shared with your clinical team. If you consent to this then a member of the research team will pass on the information that we talked about to your clinical team. You do not have to agree to this – it is your choice.

Where the information is kept

All copies of research information will be held by the research team. They will be kept secure in a locked filing cabinet. Mersey Care NHS Trust or NHS Ethics may look at the information held (for example to check whether everyone has given written consent), but this is to protect participants as well as check the researchers have completed everything they have agreed to.

Further information

If you would like any more information, please speak to;

Professor Jane L. Ireland, Dr Carol A. Ireland or Chris Duffy
Ashworth Research Centre (ARC)
Ashworth High Secure Hospital

If you have any worries you do not wish to speak to the researcher about, you should contact your care coordinator and/or the patients' complaints department who will let you know what to do.

Thank you for taking the time to read this information.

Version 3, April 2013

RESEARCH CONSENT FORM (PATIENT'S COPY) V2/April 2013

Patient Name: _____ Hospital No:_____

Research title: Developing a means of assessing and managing risk for deliberate self-harm and suicide in a high risk psychiatric population.

Lead Researcher: Professor Jane L. Ireland

I have read and understood the information sheets dated April 2013 for the above research and have had opportunity to ask questions.

..... (Patient initial)

I understand that my participation is voluntary and that I am free to withdraw from this research, without giving any reason, without my medical care or legal rights being affected. I understand that I can withdraw from this research up until it is completed.

..... (Patient initial)

I understand that no personal information obtained during the course of the research relating to myself will be disclosed to other patients.

..... (Patient initial)

I understand that all information relating to myself obtained as part of the research will remain anonymous to those outside of the research team, and that I will not be personally identified in the final research report. However, I understand that if I report information indicating a threat to others e.g. if I disclose a previously unreported crime or a possible or future crime, or indicate that I am about to engage in a behaviour that will be a risk to myself or others, or disclose information suggesting another individual has or is about to engage in such behaviour, that this will be reported.

..... (Patient initial)

Appendix 19: Study 3, Patient consent sheet

I understand that the research will be used as part of a PhD study but this will only look at group data.

..... (Patient initial)

I understand that this consent form may be seen by responsible individuals from Mersey Care NHS Trust for the purposes of monitoring research procedures. I understand that this is for audit purposes only to ensure that my consent has been sought.

..... (Patient initial)

I agree to be involved in the research carried out by **Ashworth Hospital and the University of Central Lancashire** and I am satisfied that the purpose and procedures of the research have been fully explained to me by

.....

Signed: .....(Patient) **Date:**.....

Signed: .....(Researcher) **Date:**.....

Research Title: Developing a means of assessing and managing risk for deliberate self-harm and suicide in a high risk psychiatric population.

INFORMATION SHEET - PATIENTS

Part 2: Talking to patients about their views on their self-harm and attempted suicide.

Background to the research

There is currently little research regarding factors that can affect the likelihood that a patient will engage in self-harm or suicidal behaviour. This research hopes to look at why self-injury happens, and to understand the views of patients who self-injure. It is really important to get the views of patients about their self-injury and suicidal behaviour. Ultimately, we hope to develop a tool for the formal evaluation of risk for self-harm and attempted suicide. The research will also inform the training of nursing staff and aim to influence the development of healthcare policy regarding self-harm and suicide prevention in mental health facilities.

About the research

Ashworth Research Centre (ARC) based at Ashworth High Secure Hospital is carrying out research along with the University of Central Lancashire, into your beliefs about self-injury and why it happens. It is also looking at the things which might put people at risk of hurting themselves and also any things which mean that a person makes the choice not to hurt themselves. The research data will be used as part of a PhD by Charlotte York, who is a postgraduate student at the University of Central Lancashire.

The study is split into two phases. **You are being asked to take part in Part 2** Charlotte York will only have the anonymised data and will not know your name or hospital number. The study that you are being asked to take part in asks for you to give your views as to why you may have injured yourself before. Before you think about taking part in Part 2 it is important that you take time to read the rest of this sheet.

Who is doing the research?

The ARC (Ashworth Research Centre) team including Professor Jane L. Ireland, Dr Carol A. Ireland, Chris Duffy, and Charlotte York.

Part 2: What will happen in this part of the research?

At least 50 patients are being asked to take part in Part 2. These patients have been randomly selected, although all have a history of self-harm. Thirty members of staff are also being asked for their views on an incident of patient self-injury that they have been aware of. The following steps will happen;

1. You will be shown this information sheet and have the study explained to you. This will take about 15 minutes.
2. You will be given a week to think about whether you would like to take part in the research.
3. If you would like to take part, you will be asked to sign a consent form.
4. A member of the research team will arrange a time to come and speak with you about your self-injury and suicidal behaviour history. This will take around 1 hour.
5. A member of the research team will ask you if you would like this information to be passed onto your clinical team (you do not have to agree to this).
6. When the study is finished, you will be given a handout about what the research found.

What you will be asked to talk about?

If you agree to take part a member of the research team will speak with you for about one hour about a time when you injured yourself or attempts to do so. You will be asked about a series of things associated with your self-injury and attempted suicide history using the SORC (Stimulus-Organism-Response-Consequences) procedure. It will begin by discussing the most recent incident of self-injury and concluding with an incident whereby you considered self-injury but did not engage in this behaviour. The researcher will be asking for a summary of what you think in terms of;

- What led up to the incident.
- What happened before the incident.
- What happened during the incident.
- What happened after the incident.
- Why the incident occurred.

It is hoped that this will give us some helpful ideas about <u>why</u> people hurt themselves rather than just looking at the fact that people do hurt themselves. Some people find it difficult to talk about hurting themselves, but many people also feel better after they have talked about it to someone who listens. If you find what we talk about difficult a member of the research team can pass this onto your clinical team (if you consent to this) in order for you to receive further support.

Consenting to take part

You don't have to take part in this study. If you agree to take part and then change your mind you can just let us know. You just need to let us know within six weeks of agreeing to take part so that we can make sure that we can take you out of the research. After this time the information that you provide will be made anonymous and we would not be able to pull out your individual information. You don't have to agree now. A member of the research

team will agree a time to come back to speak to you to see whether you would like to take part.

Making sure your information is anonymous
Everyone who takes part will be given a 'research number' which will be on the information collected instead of your name. Only the research team will have access to the names. This list will be destroyed once the research is completed. No one will know that any of the information is yours.

When things are not anonymous
If, whilst taking part in this research, you say something which is a threat to other people (for example a crime which you have committed which has been unreported, or that you plan to carry out a crime) this will be passed on to staff. Also if a member of the research team think that you pose a current risk of harm to yourself (like disclosing you plan to hurt yourself) this will be passed to staff. You are not asked to talk about either of these things within the research, so please be aware that if you did it would be passed onto staff. None of your information will be talked about with other patients.

You will also be asked if you would like what we talk about to be shared with your clinical team. If you consent to this then a member of the research team will pass on the information that we talked about to your clinical team. <u>You do not have to agree to this – it is your choice</u>.

Where the information is kept?
All copies of research information will be held by the research team. They will be kept secure in a locked filing cabinet. Mersey Care NHS Trust or NHS Ethics may look at the information held (for example to check whether everyone has given written consent), but this is to protect as well as checking the researchers have completed everything they have agreed to.

Further information
If you would like any more information, please speak to;

Professor Jane L. Ireland, Dr Carol A. Ireland or Chris Duffy
Ashworth Research Centre (ARC)
Ashworth High Secure Hospital

If you have any worries you do not wish to speak to the researcher about, you should contact your care coordinator and/or the patients' complaints department who will let you know what to do.

Thank you for taking the time to read this information..

Version 3, April 2013

Research Title: Developing a means of assessing and managing risk for deliberate self-harm and suicide in a high risk psychiatric population.

INFORMATION SHEET – STAFF

Part 2: Exploring staff views about incidents of self-injury and attempted suicide.

Background to the research

There is currently little research regarding factors that can affect the likelihood that a patient will engage in self-harm or suicidal behaviour. This research hopes to look at why self-injury happens, and to use the views of patients and staff to understand self-injury. It is really important to get the views of patients about their self-injury and suicidal behaviour. Ultimately, we hope to develop a tool for the formal evaluation of risk for self-harm and attempted suicide. The research will also inform the training of nursing staff and aim to influence the development of healthcare policy regarding self-harm and suicide prevention in mental health facilities.

About the research

Ashworth Research Centre (ARC) based at Ashworth High Secure Hospital is carrying out research along with the University of Central Lancashire, into your beliefs about self-injury and why it happens. It is also looking at the things which might put people at risk of hurting themselves and also any things which mean that a person makes the choice not to hurt themselves. The research data will be used as part of a PhD by Charlotte York, who is a postgraduate student at the University of Central Lancashire.

The study is split into two phases. **You are being asked to take part in Part 2.** Charlotte York will only have the anonymised data and will not know your name or hospital number. The study that you are being asked to take part in asks you to give your views about some of the incidents of self-injury and attempted suicide which you have been aware of. Patients are also being asked to give their own views in terms of incidents which they have been involved in. Before you consider taking part in Part 2 it is important that you take the time to read the following information.

Who is doing the research?

The ARC (Ashworth Research Centre) team including Professor Jane L. Ireland, Dr Carol A. Ireland, Chris Duffy, and Charlotte York.

Part 2: What will happen in this part of the research?
A minimum of 30 members of staff will be approached to ask for their views on an incident of patient self-injury or an attempted suicide which they have witnessed. Staff have been randomly selected and only qualified nursing staff are being approached. The following steps will happen in the research;

1. 30 ward based staff members will be selected who have been clinically involved in patient incidents of deliberate self-harm or attempted suicide.
2. You will be given an information sheet by a member of the research team to read through and discuss if you would like to. This should take approximately 15 minutes.
3. You will be given a week to think about whether you would like to take part in the research.
4. If you would like to take part, you will be asked to sign a consent form.
5. A member of the research team will agree a time convenient to come back and discuss with you about a time where you were aware of a patient self-injury or attempted suicide. This will take about 30 minutes.
6. When the study is completed both staff and patients will be given a handout about what the study found.

What you will be asked to talk about?
If you agree to take part you will be invited to engage in a brief discussion with the researcher to explore one incident of patient self-injury that you have witnessed. You will not be asked to identify who was involved – the researcher is interested in the incident itself. The researcher will be asking for a summary of what you think in terms of;

- What led up to the incident.
- What happened before the incident.
- What happened during the incident.
- What happened after the incident.
- Why the incident occurred.

It is hoped that this will provide some useful information as to <u>why</u> the incident occurred as opposed to just <u>what</u> happened.

Some people find that talking about self-injury is an emotionally difficult topic. If you do find this to be the case during the process of the discussion, please feel free to end the discussion.

Consenting to take part
You don't have to take part in this study. If you agree to take part and then change your mind you can just let us know, as long as you let us know within six weeks of agreeing so that we can make sure that we can take you out of the sample. The information that you provide will be anonymised and it will not be possible for us to locate your information after six weeks. You don't have to agree now. A member of the research team will agree a time

to come back to speak to you should you decide that you would like to think about taking part.

Anonymity
Everyone who takes part will be given a 'research number' which will be on the information collected instead of your name. Only the research team will have access to the names. This list will be destroyed once the research is completed. No one will know that any of the information is yours.

Security of information obtained
All copies of research information will be held by the research team. They will be kept secure in a locked filing cabinet. Mersey Care NHS Trust or NHS Ethics may look at the information held (for example to check whether everyone has given written consent), but this is to protect as well as checking the researchers have completed everything they have agreed to.

Further information
Further information on this study can be obtained at any time from the following:

Professor Jane L. Ireland, Dr Carol A. Ireland or Chris Duffy
Ashworth Research Centre (ARC)
Ashworth High Secure Hospital

If you have any concerns about the research that you do not wish to speak with the researcher about directly, you should contact your line manager who can help you.

Thank you for taking the time to read this information.

Version 3, April 2013

RESEARCH CONSENT FORM (STAFF COPY) V2/April 2013

Patient Name: _____ Hospital No:_____
Research title: Developing a means of assessing and managing risk for deliberate self-harm and suicide in a high risk psychiatric population.
Lead Researcher: Professor Jane L. Ireland

I have read and understood the information sheets dated April 2013 for the above research and have had opportunity to ask questions.

..... (Staff initial)

I understand that my participation is voluntary and that I am free to withdraw from this research, without giving any reason, without my medical care or legal rights being affected. I understand that I can withdraw from this research up until it is completed.

..... (Staff initial)

I understand that no personal information obtained during the course of the research relating to myself will be disclosed to others.

..... (Staff initial)

I understand that all information relating to myself obtained as part of the research will remain anonymous to those outside of the research team, and that I will not be personally identified in the final research report. However, I understand that if I report information indicating that others are at risk, that this will be reported.

..... (Staff initial)

I understand that the research will be used as part of a PhD study but this will only look at group data.

..... (Staff initial)

I understand that this consent form may be seen by responsible individuals from Mersey Care NHS Trust for the purposes of monitoring research procedures. I understand that this is for audit purposes only to ensure that my consent has been sought.

..... (Staff initial)

I agree to be involved in the research carried out by **Ashworth Hospital and the University of Central Lancashire** and I am satisfied that the purpose and procedures of the research have been fully explained to me by

.....

Signed: .....(Staff) **Date:**.....

Signed: .....(Researcher) **Date:**.....

Appendix 23: Study 4, Attitudes towards engaging in self-injury questions

Theory of Planned Behaviour Questions – Attitudes towards engaging in self injury

Below are a number of statements. Following each statement, rate yourself according to the scale provided for each question:

1	Injuring myself has been a common behaviour for me in the past	***Agree*** ***Disagree*** ***1 2 3 4 5 6 7***
2	Injuring myself now would be easier than the first time I injured myself	***Agree*** ***Disagree*** ***1 2 3 4 5 6 7***
3	Injuring myself would provide relief from my current symptoms of discomfort	***Agree*** ***Disagree*** ***1 2 3 4 5 6 7***
4	Do you have an understanding of the reasons you injure yourself?	***Definitely*** ***Definitely not*** ***1 2 3 4 5 6 7***
5	Injuring myself would be.....	***Pleasant*** ***Unpleasant*** ***1 2 3 4 5 6 7***
6	How easy would it be for you to self-injure...	***Easy*** ***Difficult*** ***1 2 3 4 5 6 7***
7	What is the strength of your intention to injure yourself in the next week...	***Strong*** ***Weak*** ***1 2 3 4 5 6 7***
8	Do you have any plans for how you would injure yourself	***Definitely*** ***Definitely not*** ***1 2 3 4 5 6 7***
9	I have positive things in my life	***Disagree*** ***Agree*** ***1 2 3 4 5 6 7***
10	Does the thought of trying to commit suicide make you feel.....	***Relaxed*** ***Frightened*** ***1 2 3 4 5 6 7***
11	Do you know the reasons behind your self-injury/thoughts of self-injury?	***Definitely*** ***Definitely not*** ***1 2 3 4 5 6 7***
12	It is in my control if I injure myself	***Definitely*** ***Definitely not*** ***1 2 3 4 5 6 7***
13	I intend to injure myself	***Definitely*** ***Definitely not*** ***1 2 3 4 5 6 7***

Appendix 23: Study 4, Attitudes towards engaging in self-injury questions

14	After injuring yourself would you be more likely to feel.....	***Relieved*** ***Guilty*** ***1 2 3 4 5 6 7***
15	I feel part of a valued group of people (e.g. friends, family, colleagues, people around me)	***Definitely not*** ***Definitely*** ***1 2 3 4 5 6 7***
16	Have you found everything getting on top of you?	***Definitely*** ***Definitely not*** ***1 2 3 4 5 6 7***
17	My current environment is having a .....impact on my thoughts about self-injury	***Negative*** ***Positive*** ***1 2 3 4 5 6 7***
18	I want support to explore other ways to cope with my thoughts and emotions	***Definitely not*** ***Definitely*** ***1 2 3 4 5 6 7***

Brief COPE

These items deal with how you cope with stress in your life. There are many ways to deal with problems. These items ask about some of the ways you might try and cope with problems. Obviously, different people deal with things in different ways, but I'm interested in how you've tried to deal with it. Each item says something about a particular way of coping. I want to know to what extent you've been doing what the item says. How much or how frequently. Don't answer on the basis of whether it seems to be working or not—just whether or not you're doing it. Use these response choices. Try to rate each item separately in your mind from the others. Make your answers as true FOR YOU as you can.

1- I haven't been doing this at all
2- I've been doing this a little bit
3- I've been doing this a medium amount
4- I've been doing this a lot

1. I've been turning to work or other activities to take my mind off things.	1	2	3	4
2. I've been concentrating my efforts on doing something about the situation I'm in.	1	2	3	4
3. I've been saying to myself "this isn't real."	1	2	3	4
4. I've been using alcohol or other drugs to make myself feel better.	1	2	3	4
5. I've been getting emotional support from others.	1	2	3	4
6. I've been giving up trying to deal with it.	1	2	3	4
7. I've been taking action to try to make the situation better.	1	2	3	4
8. I've been refusing to believe that it has happened.	1	2	3	4
9. I've been saying things to let my unpleasant feelings escape.	1	2	3	4
10. I've been getting help and advice from other people.	1	2	3	4
11. I've been using alcohol or other drugs to help me get through it.	1	2	3	4
12. I've been trying to see it in a different light, to make it seem more positive.	1	2	3	4
13. I've been criticizing myself.	1	2	3	4
14. I've been trying to come up with a strategy about what to do.	1	2	3	4
15. I've been getting comfort and understanding from someone.	1	2	3	4
16. I've been giving up the attempt to cope.	1	2	3	4
17. I've been looking for something good in what is happening.	1	2	3	4
18. I've been making jokes about it.	1	2	3	4
19. I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping.	1	2	3	4
20. I've been accepting the reality of the fact that it has happened.	1	2	3	4
21. I've been expressing my negative feelings.	1	2	3	4

22. I've been trying to find comfort in my religion or spiritual beliefs.	1	2	3	4
23. I've been trying to get advice or help from other people about what to do.	1	2	3	4
24. I've been learning to live with it.	1	2	3	4
25. I've been thinking hard about what steps to take.	1	2	3	4
26. I've been blaming myself for things that happened.	1	2	3	4
27. I've been praying or meditating.	1	2	3	4
28. I've been making fun of the situation.	1	2	3	4

SSQ-3 Social Support

The following questions are about people in your environment who provide you with help or support. Each question has two parts. In the first part, list all the people you know excluding yourself who you can count on for help or support in the manner described. Give the person's initials and their relationship to you. For the second part circle how satisfied you are with the overall support you have. If you have had no support circle 'no one' but still rate your level of satisfaction.

Example:

Who do you know you can trust with information that could get you in trouble?

No one	1. T.N. (brother)	4. W.M. (employer)	7.
	2. F.L. (friend)	5. L.V (my nurse)	8.
	3. S.P. (friend)	6.	9.

How satisfied?

1	**2**	**3**	**4**	**5**	**6**
very satisfied	fairly satisfied	a little satisfied	a little dissatisfied	fairly dissatisfied	very dissatisfied

1. Who accepts you totally, including your worst and your best points?

No one	1.	4.	7.
	2.	5.	8.
	3.	6.	9.

How satisfied?

1	**2**	**3**	**4**	**5**	**6**
very satisfied	fairly satisfied	a little satisfied	a little dissatisfied	fairly dissatisfied	very dissatisfied

2. Who can you really count on to tell you, in a thoughtful manner, when you need to improve in some way?

No one	1.	4.	7.
	2.	5.	8.
	3.	6.	9.

How satisfied?

1	**2**	**3**	**4**	**5**	**6**
very satisfied	fairly satisfied	a little satisfied	a little dissatisfied	fairly dissatisfied	very dissatisfied

3. Who do you feel truly loves you deeply?

No one	1.	4.	7.
	2.	5.	8.
	3.	6.	9.

How satisfied?

1	**2**	**3**	**4**	**5**	**6**
very satisfied	fairly satisfied	a little satisfied	a little dissatisfied	fairly dissatisfied	very dissatisfied

Resilience Scale for Adults

Please circle a number from 1 to 5 on each scale which best represents your opinion.

1. When something unforeseen happens:						
I always find a solution	1	2	3	4	5	I often feel bewildered
2. My personal problems:						
Are unsolvable	1	2	3	4	5	I know how to solve
3. My abilities:						
I strongly believe in	1	2	3	4	5	I am uncertain about
4. My judgements and decisions:						
I often doubt	1	2	3	4	5	I trust completely
5. In difficult periods I have a tendency to:						
View everything as gloomy	1	2	3	4	5	Find some good that helps me thrive
6. Events in my life that I cannot influence:						
I manage to come to terms with	1	2	3	4	5	Are a constant source of worry
7. My plans for the future are:						
Difficult to accomplish	1	2	3	4	5	Possible to accomplish
8. My future goals:						
I know how to accomplish	1	2	3	4	5	I am unsure how to accomplish
9. I feel that my future looks						
Very promising	1	2	3	4	5	Uncertain
10. My goals for the future are						
Unclear	1	2	3	4	5	Well thought out
11. I am at my best when						
I have a clear goal to strive for	1	2	3	4	5	Can take one day at a time
12. When I start on new things/projects						
I rarely plan ahead, just get on with it	1	2	3	4	5	I prefer to have a thorough plan
13. I am good at:						
Organizing my time	1	2	3	4	5	Wasting my time
14. Rules and regular routines						
Are absent in my everyday life	1	2	3	4	5	Simplify my everyday life

15. I enjoy being						
Together with other people	1	2	3	4	5	By myself
16. To be flexible in social settings						
Is not important to me	1	2	3	4	5	Is really important to me
17. New friendships are something						
I make easily	1	2	3	4	5	I have difficulty in making
18. Meeting new people is:						
Difficult for me	1	2	3	4	5	Something I am good at
19. When I am with others:						
I easily laugh	1	2	3	4	5	I seldom laugh
20. For me, thinking of good topics of conversation is:						
Difficult	1	2	3	4	5	Easy
21. My family's understanding of what is important in life is:						
Quite different from mine	1	2	3	4	5	Very similar to mine
22. I feel:						
Very happy with my family	1	2	3	4	5	Very unhappy with my family
23. My family is characterized by:						
Disconnection	1	2	3	4	5	Healthy coherence
24. In difficult periods my family:						
Keeps a positive outlook on the future	1	2	3	4	5	Views the future as gloomy
25. Facing other people, our family acts:						
Unsupportive of one another	1	2	3	4	5	Loyal towards one another
26. In my family we like to:						
Do things on our own	1	2	3	4	5	Do things together
27. I can discuss personal issues with						
No one	1	2	3	4	5	Friends and family
28. Those who are good at encouraging me are:						
Some close friends/family members	1	2	3	4	5	No one
29. The bond among my friends is:						
Weak	1	2	3	4	5	Strong
30. When a family member experiences a crisis/emergency:						
I am informed right	1	2	3	4	5	It takes a while before I am

away						told
31. I get support from:						
Friends/family members	1	2	3	4	5	No one
32. When needed, I have:						
No one who can help me	1	2	3	4	5	Always someone who can help me
33. My close friends/family members:						
Appreciate my qualities	1	2	3	4	5	Dislike my qualities

BSS (THE ORIGINAL VERSIONS WILL BE USED AS THIS IS COPYRIGHTED AND CANNOT BE CIRCULATED. IT IS REPRODUCED HERE SO CONTENT CAN BE SEEN

Directions: Please read each group of statements below. Circle the one statement in each group that **best** describes how you have been feeling for the **last week, including today**. Be sure to read all of the statements in each group before making a choice.

1	0	I have a moderate to strong wish to live
	1	I have a weak wish to live
	2	I have no wish to live
2	0	I have no wish to die
	1..	I have a weak wish to die
	2.	I have a moderate to strong wish to die
3	0..	My reasons for living outweigh my reasons for dying
	1	My reasons for living or dying are about equal
	2	My reasons for dying outweigh my reasons for living
4	0	I have no desire to kill myself
	1	I have a weak desire to kill myself
	2	I have a moderate to strong desire to kill myself
5	0	I would try to save my life if I found myself in a life threatening situation
	1	I would take a chance on life or death if I found myself in a life threatening situation
	2	I would not take the steps necessary to avoid death if I found myself in a found myself in a life threatening situation

If you have circled the zero statements in both groups 4 and 5 above then skip down to Group 20. If you have marked a 1 or a 2 in either Group 4 or 5, then go to Group 6.

6	0	I have brief periods of thinking about killing myself which pass quickly

	1	I have periods of thinking about killing myself which last for moderate amounts of time
	2	I have long periods of thinking about killing myself
7	0	I rarely or only occasionally think about killing myself
	1	I have frequent thoughts about killing myself
	2	I continuously think about killing myself
8	0	I do not accept the idea of killing myself
	1	I neither accept nor reject the idea of killing myself
	2	I accept the idea of killing myself
9	0	I can keep myself from committing suicide
	1	I am unsure that I can keep myself from committing suicide
	2	I cannot keep myself from committing suicide
10	0	I would not kill myself because of my family, friends, religion, possible injury from an unsuccessful attempt
	1	I am somewhat concerned about killing myself because of my family, friends, religion, possible injury from an unsuccessful attempt etc.
	2	I am not or only a little concerned about killing myself because of my family, friends, religion, possible injury from an unsuccessful attempt etc...
11	0	My reasons for wanting to commit suicide are primarily aimed at influencing other people, such as getting even with people, making people happier, making people pay attention to me etc..
	1	My reasons for wanting to commit suicide are not only aimed at influencing other people, but also represent a way of solving my problems.
	2	My reasons for wanting to commit suicide are primarily based upon escaping from my problems
12	0	I have no specific plan about how to kill myself
	1	I have considered ways of killing myself but have not worked out the details
	2	I have a specific plan for killing myself
13	0	I do not have access to a method or opportunity to kill myself
	1	The method that I would use for committing suicide takes time, and I really do not have a good opportunity to use this method
	2	I have access or anticipate having access to the method that I would choose for killing myself and also have or shall have the opportunity to use it
14	0	I do not have the courage or ability to commit suicide
	1	I am unsure that I have the courage or ability to commit suicide
	2	I have the courage and ability to commit suicide
15	0	I do not expect to make a suicide attempt
	1	I am unsure that I shall make a suicide attempt

	2	I am sure that I shall make a suicide attempt
16	0	I have made no preparations for committing suicide
	1	I have made some preparations for committing suicide
	2	I have almost finished or completed my preparations for committing suicide
17	0	I have not written a suicide note
	1	I have thought about writing a suicide note or have started to write one, but have not completed it
	2	I have completed a suicide note
18	0	I have made no arrangements for what will happen after I have committed suicide
	1	I have thought about making some arrangements for what will happen after I have committed suicide
	2	I have made definite arrangements for what will happen after I have committed suicide
19	0	I have not hidden my desire to kill myself from people
	1	I have held back telling people about wanting to kill myself
	2	I have attempted to hide, conceal or lie about wanting to commit suicide
		Go to group 20

20	0	I have never attempted suicide
	1	I have attempted suicide once
	2	I have attempted suicide two or more times
	If you have previously attempted suicide please continue with the next statement group	
21	0	My wish to die during the last suicide attempt was low
	1	My wish to die during the last suicide attempt was moderate
	2	My wish to die during the last suicide attempt was high

Abbreviated Plutchik Impulsivity Scale

1. I do things on the spur of the moment.

1	***2***	***3***	***4***
never	sometimes	often	very often

2. I do things impulsively.

1	***2***	***3***	***4***
never	sometimes	often	very often

Appendix 29: Study 4, Responsible Clinician Consent Form

RESEARCH CONSENT FORM (PATIENT'S RESPONSIBLE CLINICIAN) V2/April 2013

Patient Name:_____ Hospital No:_____
Research Title: Developing a means of assessing and managing risk for deliberate self-harm and suicide in a high risk psychiatric population.
Lead Researcher: Professor Jane L. Ireland

I ……..... Responsible Clinician

to: .....

hereby give my approval to the involvement of the above-named patient in the above research conducted by **Ashworth Hospital and the University of Central Lancashire**. I have received a written explanation of the research and I am also satisfied that the patient is capable of giving his consent for his involvement in the research.

Signed: ..... **Date:** .....

Research Title: Developing a means of assessing and managing risk for deliberate self-harm and suicide in a high risk psychiatric population.

INFORMATION SHEET – PATIENTS

Exploring patient's views about incidents of self-injury and attempted suicide.

Background to the research

There is currently little research regarding factors that can affect the likelihood that a patient will engage in self-harm or suicidal behaviour. This research hopes to look at why self-injury happens, and to understand the views of patients who engage in self-injury. It is really important to get the views of patients about their self-injury and suicidal behaviour. Ultimately, we hope to develop a tool for the formal evaluation of risk for self-harm and attempted suicide. The research will also inform the training of nursing staff and aim to influence the development of healthcare policy regarding self-harm and suicide prevention in mental health facilities.

About the research

Ashworth Research Centre (ARC) based at Ashworth High Secure Hospital is carrying out research along with the University of Central Lancashire, into your beliefs about self-injury and why it happens. It is also looking at the things which might put people at risk of hurting themselves and also any things which mean that a person makes the choice not to hurt themselves. The research data will be used as part of a PhD by Charlotte York, who is a postgraduate student at the University of Central Lancashire.

Charlotte York will only have the anonymised data and will not know your name or hospital number. The study that you are being asked to take part in looks at the differences in beliefs about self-injury between those patients who have self-injured in the past and those who have not. I am interested in your views and beliefs about this issue. All Responsible Clinicians were asked to give a list of names of patients who did or did not have a history of self-injury.

You do not have to take part, but before you make up your mind please read the rest of this sheet.

Who is doing the research?

The ARC (Ashworth Research Centre) team including Professor Jane L. Ireland, Dr Carol A. Ireland, Chris Duffy, and Charlotte York.

What will happen in this part of the research?
80 patients with a history of deliberate self-harm and 40 patients with no history of deliberate self-harm will hopefully take part. The following steps will happen;

1. You will be shown this information sheet and have the study explained to you. This will take about 15 minutes.
2. You will be given a week to think about whether you would like to take part in the research.
3. If you would like to take part, you will be asked to sign a consent form.
4. A member of the research team will arrange a time to come and complete some questionnaires with you (this will take about an hour – please see appendix).
5. When the study is finished, you will be given a handout about what the research found.

What will be completed?
A member of the research team will come and see you and ask you to complete 7 questionnaires that ask you about your views and attitudes about self-injury and other areas which might be linked to self-injury.

Some people find it difficult to talk about hurting themselves, but many people also feel better after they have talked about it to someone who listens. If you do find what is discussed difficult then this can be passed onto your clinical team (if you consent to this) in order for you to receive further support.

Consenting to take part
You do not have to take part in this study. If you agree to take part and then change your mind you can just let us know. You just need to let us know within six weeks of agreeing to take part so that we can make sure that we can take you out of the research. The information that you provide will be made anonymous and we would not be able to pull out your individual information. You don't have to agree now. A member of the research team will agree a time to come back to speak to you to see whether you would like to take part.

Making sure your information is anonymous
Everyone who takes part will be given a 'research number' which will be on the information collected instead of your name. Only the research team will have access to the names. This list will be destroyed once the research is completed. No one will know that any of the information is yours.

When things are not anonymous
If, whilst taking part in this research, you say something which is a threat to other people (for example a crime which you have committed which has been unreported, or that you plan to carry out a crime) this will be passed on to staff. Also if a member of the research team think that you pose a current risk of harm to yourself (like disclosing you plan to hurt yourself) this will be passed to staff. You are not asked to talk about either of these things within the research, so please be aware that if you did it would be passed onto staff. None of your information will be talked about with other patients.

You will also be asked if you would like what we talk about to be shared with your clinical team. If you consent to this then a member of the research team will pass on the information that we talked about to your clinical team. You do not have to agree to this – it is your choice.

Where the information is kept
All copies of research information will be held by the research team. They will be kept secure in a locked filing cabinet. Mersey Care NHS Trust or NHS Ethics may look at the information held (for example to check whether everyone has given written consent), but this is to protect you as well as checking the researchers have completed everything they have agreed to.

Further information
If you would like any more information, please speak to;

Professor Jane L. Ireland, Dr Carol A. Ireland or Chris Duffy
Ashworth Research Centre (ARC)
Ashworth High Secure Hospital

If you have any worries and you do not wish to speak to the researcher, you should contact your care coordinator and/or the patients' complaints department who will be able to advise you further.

Thank you for taking the time to read this information.

Version 3, April 2013

RESEARCH CONSENT FORM (PATIENT'S COPY) V2/April 2013

Patient Name: _____ Hospital No:_____

Research title: Developing a means of assessing and managing risk for deliberate self-harm and suicide in a high risk psychiatric population.

Lead Researcher: Professor Jane L. Ireland

I have read and understood the information sheets dated April 2013 for the above research and have had opportunity to ask questions.

..... (Patient initial)

I understand that my participation is voluntary and that I am free to withdraw from this research, without giving any reason, without my medical care or legal rights being affected. I understand that I can withdraw from this research up until it is completed.

..... (Patient initial)

I understand that no personal information obtained during the course of the research relating to myself will be disclosed to other patients.

..... (Patient initial)

I understand that all information relating to myself obtained as part of the research will remain anonymous to those outside of the research team, and that I will not be personally identified in the final research report. However, I understand that if I report information indicating a threat to others e.g. if I disclose a previously unreported crime or a possible or future crime, or indicate that I am about to engage in a behaviour that will be a risk to myself or others, or disclose information suggesting another individual has or is about to engage in such behaviour, that this will be reported.

..... (Patient initial)

I understand that the research will be used as part of a PhD study but this will only look at group data.

..... (Patient initial)

I understand that this consent form may be seen by responsible individuals from Mersey Care NHS Trust for the purposes of monitoring research procedures. I understand that this is for audit purposes only to ensure that my consent has been sought.

..... (Patient initial)

I agree to be involved in the research carried out by **Ashworth Hospital and the University of Central Lancashire** and I am satisfied that the purpose and procedures of the research have been fully explained to me by

.....

Signed: .....(Patient) **Date:**.....

Signed: .....(Researcher) **Date:**.....

	Age			**TBP Anticipated affect**		
	Mean	***SD***	***Skewness/ kurtosis***	***Mean***	***SD***	***Skewness/ kurtosis***
Agree 1	41.1	11.3	0.185/-.631	6.04	3.47	2.523/6.275
Agree 2	42.8	8.77	-1.662/2.679	12	7.75	1.377/2.356
Agree 3	33.8	7.22	-.040/-2.030	10.5	3.33	-.608/1.337
Middle 4	36.3	12	0.934/-.719	11.5	7.27	.791/-.437
Disagree 5	40.1	12.36	0.423/-1.246	12.71	5.44	.375/-1.403
Disagree 6	32.3	4.59	0.093/-1.751	15.38	8.21	.566/-1.077
Disagree 7	38	11.32	1.026/.433	21.47	9.09	-.535/-.802

	TBP Subjective norms			**SSQ Satisfaction**		
	Mean	***SD***	***Skewness/ kurtosis***	***Mean***	***SD***	***Skewness/ kurtosis***
Agree 1	2.21	1.98	1.598/1.416	1.48	0.9004	2.048/2.940
Agree 2	3	2.16	1.190/1.500	1.84	1.2781	1.667/2.651
Agree 3	2.67	1.63	.383/-1.481	1.67	1.0541	1.821/3.172
Middle 4	1.75	1.39	1.440/.000	1.71	0.844	.589/-1.665
Disagree 5	3.71	2.14	.517/-.771	1.33	0.4303	.651/-1.704
Disagree 6	2.88	1.64	.778/.866	1.29	0.4155	.895/-1.132
Disagree 7	3.16	2.41	.565/-1.426	1.21	0.5688	3.347/11.789

	APSI Impulsivity			**COPE self-blame**		
	Mean	***SD***	***Skewness/ kurtosis***	***Mean***	***SD***	***Skewness/ kurtosis***
Agree 1	3.29	1.73	1.426/1.449	4.33	2.16	.601/-.853
Agree 2	4.75	1.26	-.1.129/2.227	3.75	0.96	.855/-1.289
Agree 3	4	1.26	.000/2.500	4.5	1.38	1.3875/2.355
Middle 4	4.38	1.51	.486/.858	5.38	1.85	.536/-.947
Disagree 5	3.71	0.95	-.863/1.245	4.57	1.9	-.154/-1.87
Disagree 6	4.5	1.69	.118/-.973	4.5	2.2	.427/-.940
Disagree 7	5.9	1.94	-.243/-1.191	5.16	2.34	-.212/-1.605

	RSA Total			**Average number of family/friends self-harm**		
	Mean	***SD***	***Skewness/ kurtosis***	***Mean***	***SD***	***Skewness/ kurtosis***
Agree 1	123.67	22.44	-.599/-.806	1.25	0.44	1.233/-.531
Agree 2	99.225	10.84	-1.989/3.961	1.25	0.5	2.00/4.00
Agree 3	119.17	12.27	-1.736/3.143	1.5	0.54	.000/-3.333
Middle 4	111	11.88	.008/-2.033	2	1.31	1.018/-.700
Disagree 5	111	13.75	1.275/1.193	2.71	1.38	.706/-.326
Disagree 6	110.25	17.1	2.003/4.459	2	0.93	.000/-2.100
Disagree 7	110.95	24.46	-.438/-.469	2.42	1.26	.570/-.815

	TPB Total			**SSQ friends and family average**		
	Mean	***SD***	***Skewness/ kurtosis***	***Mean***	***SD***	***Skewness/ kurtosis***
Agree 1	19.58	7.87	2.188/6.760	4	2.24	.071/-.089
Agree 2	26	12.88	1.810/3.265	2.9	2.2	-.164/-2.025
Agree 3	26	6.51	.639/2.019	4.1	2.8	1.125/1.424
Middle 4	28.13	10.15	.997/-.472	4.6	2.03	.051/-1.240
Disagree 5	27.71	11.18	1.036/2.217	4.7	2.14	-1.143/-.229
Disagree 6	34.63	14.27	.933/.365	3.7	1.8	.385/-1.115
Disagree 7	41.58	14.45	.005/-.218	3.5	1.52	.347/-1.305

Appendix 33: Study 4, Pearson correlation table

		Injuring myself has been a common behaviour in the past	BSS total	RSA total	APSI total	COPE self-blame	TPB anticipated affect total
Pearson correlation	Injuring myself has been a common behaviour in the past	1.000	.248	-.230	.466	.152	.655
	BSS total	.248	1.000	-.476	.142	.197	.369
	RSA total	-.230	-.476	1.000	-.216	-.233	-.372
	APSI total	.466	.142	-.216	1.000	.031	.564
	COPE self-blame	.152	.197	-.233	.031	1.000	.214
	TPB anticipated affect total	.655	.369	-.372	.564	.214	1.000
Sig (1-tailed)	Injuring myself has been a common behaviour in the past	.	.015	.023	.000	.094	.000
	BSS total	.015	.	.000	.111	.044	.001
	RSA total	.023	.000	.	.030	.021	.000
	APSI total	.000	.111	.030	.	.396	.000
	COPE self-blame	.094	.044	.021	.396	.	.032
	TPB anticipated affect total	.000	.001	.000	.000	.032	.